AMERICAN
GAS JOURNAL

NOVEMBER 1942

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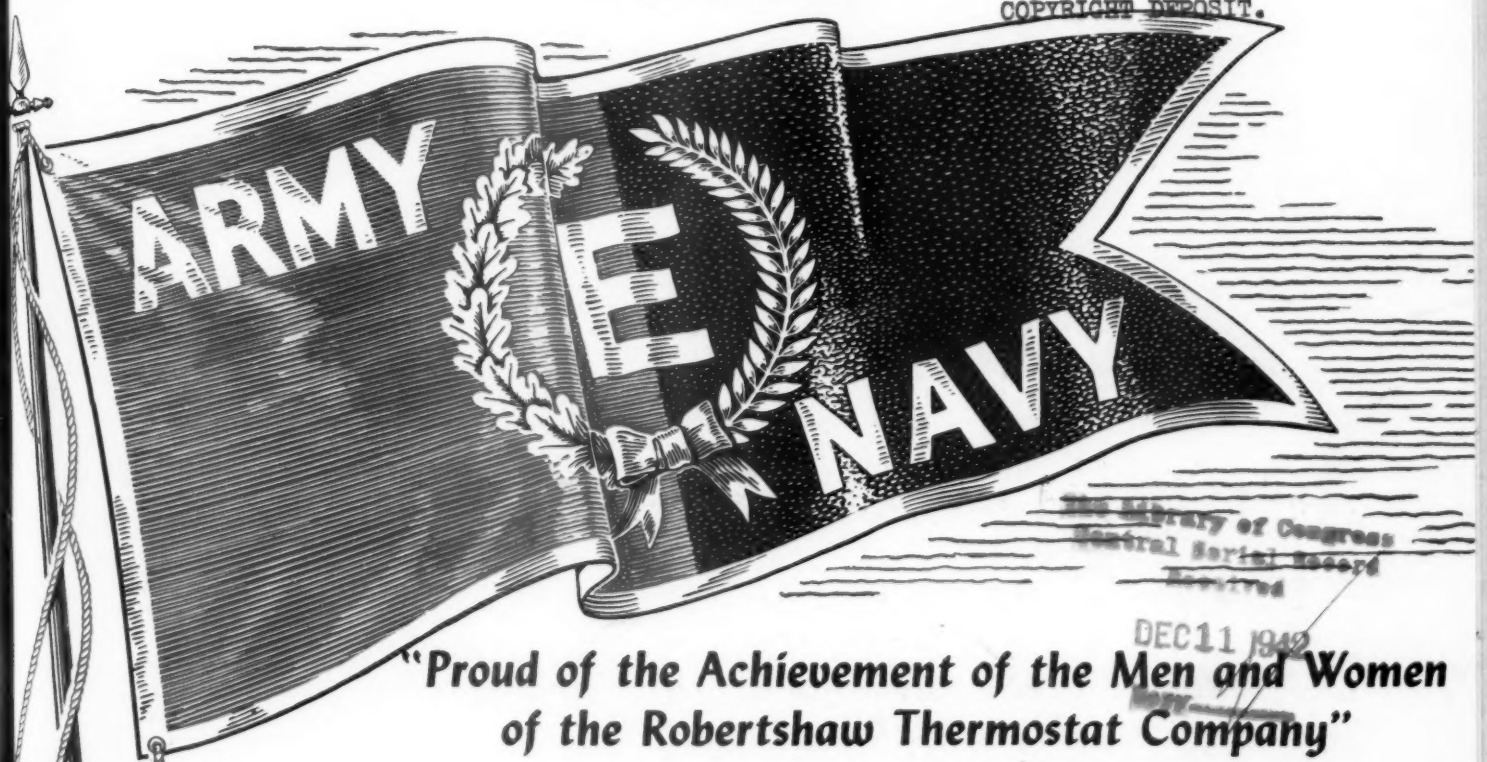

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"Proud of the Achievement of the Men and Women of the Robertshaw Thermostat Company"

—Robert P. Patterson, Under Sec'y of War

Years of precision skill put into the manufacture of Robertshaw Thermostats now has its greatest reward. Quoted above, are the words of Under Secretary of War Patterson, in awarding Robertshaw the Army-Navy Production E for "high achievement in the production of war equipment." Wrote Mr. Patterson to John A. Robertshaw, President of Robertshaw Thermostat Company:

"The patriotism which you and your employees have shown by your remarkable production record is helping our country along the road to victory. The Army and Navy are proud of the achievement of the men and women of the Robertshaw Thermostat Company. May I extend to the Robertshaw Thermostat Company congratulations for accomplishing more than seemed reasonable or possible a year ago."

Men and women of Robertshaw who have made this possible... your company salutes you!

ROBERTSHAW
THERMOSTAT COMPANY

DEC 11 1942

HIGHER GAS PRESSURE CONTROL STANDARDS *pioneered in* EMCO REGULATORS

Section of EMCO Mechanical Laboratories

THE higher standards of gas pressure control, pioneered in EMCO Regulator design developments during recent years, are now helping the Gas Industry to "carry the load" during these critical times. EMCO Regulators are contributing much to the efficient wartime use of this essential fuel through the closer control that they make possible.

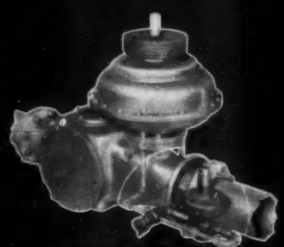
During the last decade our research staff developed such new pressure control equipment as the EMCO Ejector Service Regulator, a complete line of Appliance Regulators, including the Rangelator, the EMCO Pilot Loading System, the Emcoloader, the Crawford Type 38 Regulator and the EMCO "1001" Regulator. No other manufacturer can begin to match this steady, consistent program of advancement in regulator design and performance.

Today's pioneering and development work must, of obvious necessity, be largely devoted to products for the war effort. However, as progress is made in these lines, it becomes apparent that many of the emergency dictated findings will contribute to the progress of the industry we serve after the war is won. We look ahead, confident that the output of plants like ours will sooner or later overwhelm the Axis and contribute many gains for peacetime application.

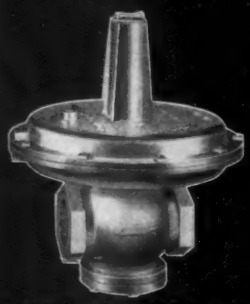
EMCO RESEARCH MADE THIS MODERN PRESSURE CONTROL EQUIPMENT POSSIBLE

EMCO Pilot Loading System for Accurate High Pressure Regulator Control

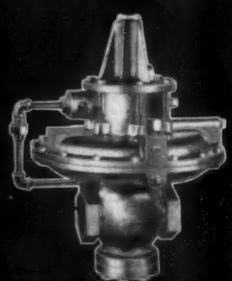
The Rangelator for Burner Control on Gas Ranges



The EMCOLOADER for Low Pressure Distribution Control

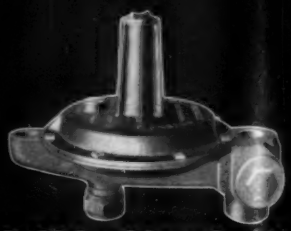


The Crawford Type 38 Regulator for Large Appliances, Industrial Furnace and Gas Engine Control



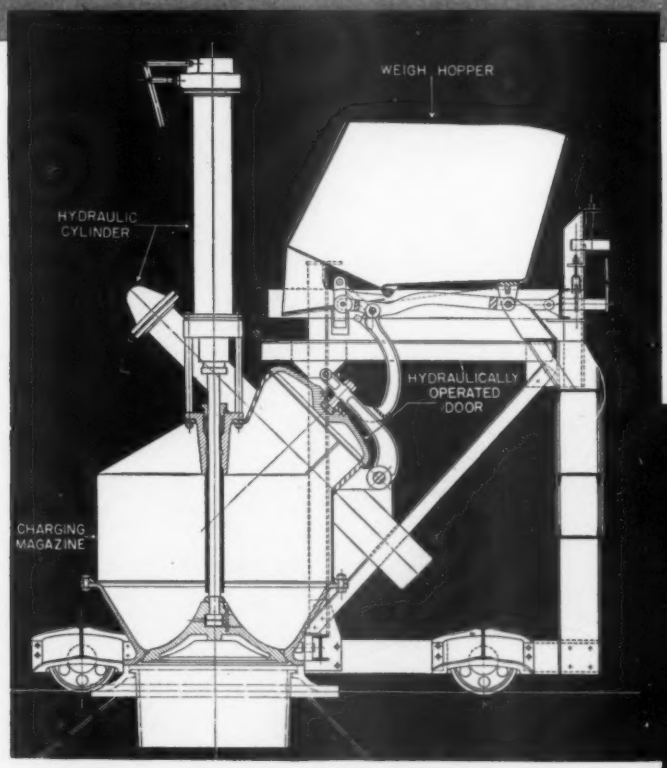
The EMCO "1001" Regulator for General Pressure Control Service

EMCO Field Regulator for Reducing High Pressures from Wells and Transmission Lines

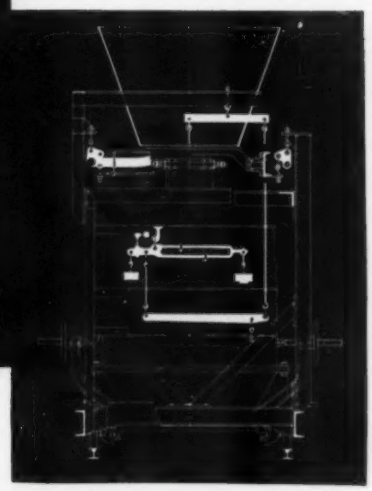


EMCO Type B Ejector Regulator for Domestic Service Lines

SEMET-SOLVAY *Automatic* CHARGING MACHINE



INCREASES CAPACITY *Saves Labor*



At least ten per cent increase in capacity of your water gas machine can be obtained by the addition of a Semet-Solvay Automatic Charging Machine. Part of the increase is obtained by eliminating shut-downs for charging, part from the added efficiency of a fuel bed of constant depth.

The charger refuels the generator once every cycle during the back-run period. Fuel is accurately weighed by a built-in scale and is uniformly distributed by a hydraulically-controlled spreader. A clamping device gives a gas-tight closure between charger and generator. Seating of the doors is cushioned by the hydraulic cylinders.

The Semet-Solvay Automatic Charging Machine is built for use with any make of water gas or blue gas machine. Automatic charging is not recommended however when the fuel used is bituminous coal. If you operate on coke or anthracite coal, why not write us for further information and a list of satisfied users.

SEMET-SOLVAY
ENGINEERING CORPORATION
40 Rector Street New York, N. Y.

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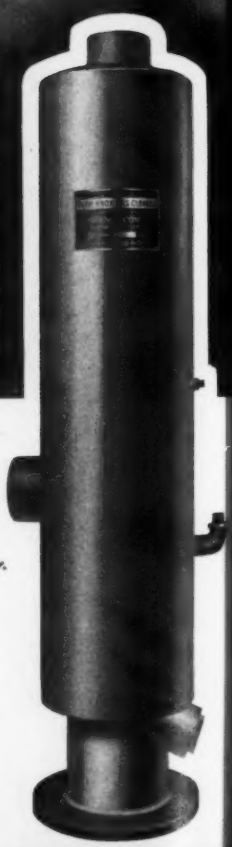
"OLD DUSTY" may be stealing your gas...your profits

Cutting a gas line and blowing it out is good. Keeping dust out is better.



HOW can you tell when "Old Dusty" has been on the job? Easy! He scratches deep grooves on regulating valves, meter valves, orifice plates, displacement meters . . . on all equipment through which gas flows. Result: You lose money because unmetered gas gets away from you, proper pressures cannot be maintained, equipment wears out, your customers complain.

WHY PUT UP WITH DUST, RUST, SCALE AND LIQUID CONDENSATES WHEN THIS CLEANER COSTS ONLY . . . . . $95.

"K" Series has been designed for—City Regulators . . . Small city gate stations . . . Town border stations . . . Medium and large industrials. (*Model shown is K-6.* It will condition 396 MCF standard gas per day flowing at 30# gage pressure.)

Keep this dust out of YOUR lines

ASK FOR FULL INFORMATION REGARDING THE "K" SERIES GAS CLEANER. Please state where it will be placed, maximum gas volume MCF hour, minimum and maximum pressures . . . and we will quote you on the size and type you need.

BLAW-KNOX
GAS CLEANERS

BLAW-KNOX DIVISION of Blaw-Knox Company · FARMERS BANK BLDG. PITTSBURGH, P.

Chalk up another one for you!

It was a direct hit — in a running fight—which our side won because our guns were a little better, our armor a little tougher, and because there was plenty there when we needed it. Plenty guns. Plenty ammunition. Plenty of the machines of war. Made in the U. S. A. . . . from metals melted, worked and hardened by gas-fired flames . . . by workers fed and warmed and implemented by gas.

There is hardly a war product you haven't had a hand in—so important is gas to our production. Shipyards, arsenals, tank plants, munitions works, metals producing and metals working plants—all produce better products, faster, because of the gas industry's contributions to techniques of production and ability to handle the load.

E. J. LAVINO AND COMPANY
1528 WALNUT STREET, PHILADELPHIA, PA.

LAVINO "ACTIVATED" OXIDES

GREATER CAPACITY . . . GREATER ACTIVITY . . . LESS OXIDE REMOVES MORE H_2S!

Lavino's participation in this great industry-wide war program is in the saving of material, time and labor in gas purification for many leading gas companies. . . . A contribution valuable in peacetime, of vastly increased importance now.

INVEST IN VICTORY—BUY MORE WAR BONDS!

LAVINO ACTIVATED OXIDE

Lend to defend her right to be free

BUY UNITED STATES WAR BONDS & STAMPS EVERY DAY...TILL

Victory

GPM
IRON HYDROXIDE

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LONG ISLAND CITY • NEW YORK

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NUMBER 5

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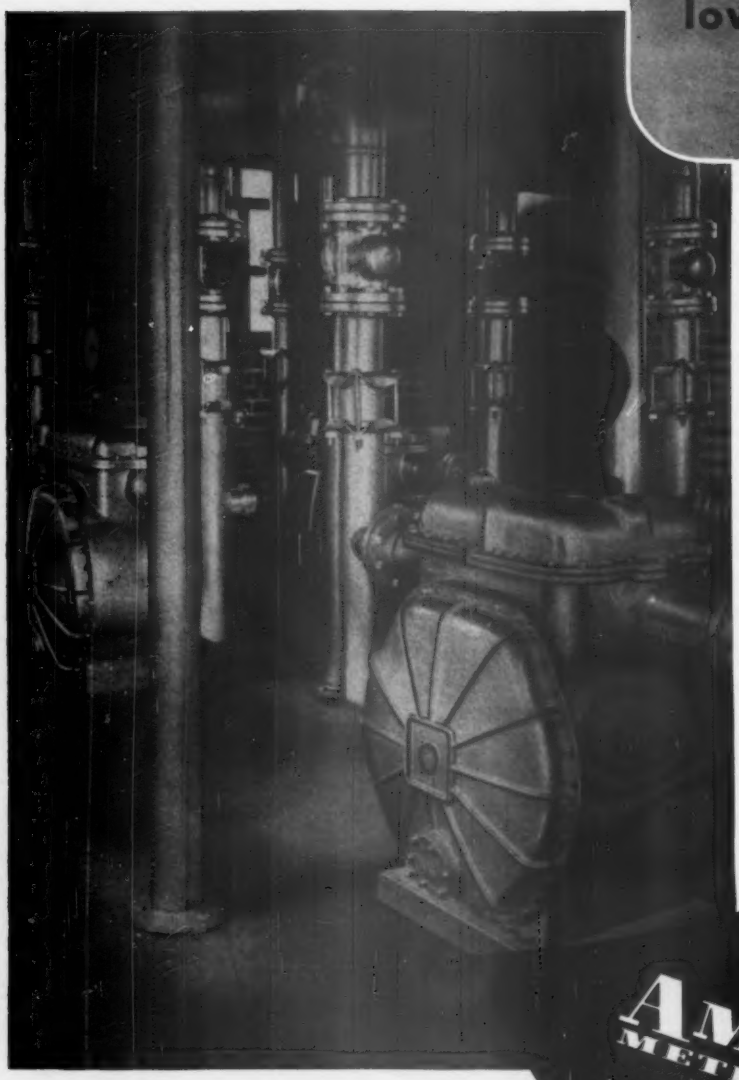
Once again

IRONCASE meters chosen for accuracy and low performance cost!



● Showing three of the four master meters (Metric-American 500-B Ironcase models—equipped with Metric Volume and Pressure Gages) inside meter house of a prominent low cost housing project.

● Long-life meter accuracy and stamina, are carefully considered economy factors in this installation at a newly completed FHA low cost housing project in a large Southern city. In peace and wartime economy, the space saving, rustproof METRIC-AMERICAN Ironcase contributes to low cost gas service for thousands of industrial and other large-volume users of gas.

. . . Outstanding performance made possible by Ironcase features such as one-piece body casting, rigidly fastened full bellows diaphragms, large capacity valves (non-pulsating, minimum friction type), gas-tight stuffing boxes, full provision for bearing lubrication and for condensate drainage.

A-1820

AMERICAN METER COMPANY
METRIC METAL WORKS • ERIE, PA

NOVEMBER
1942

AMERICAN
GAS JOURNAL

VOLUME 157
NO. 5

The 24th Annual Meeting American Gas Association

THE TWO-DAY meeting of the American Gas Association, held at Chicago, October 5th and 6th, was attended by over 750 men and women holding key positions in the industry from coast to coast.

The program of the General Session and of all the sectional meetings covered many subjects of special interest to the industry during this war emergency.

General Sessions

General Sessions meeting was held Tuesday, forenoon and afternoon, with the general luncheon at noon, at which time the various awards were made.

George S. Hawley, President of the A.G.A. presided.

In his address he reviewed the activities of the A.G.A. during the past year, and referred particularly to the research program going on through the laboratories at Cleveland and Los Angeles and the Institute of Gas Technology, Chicago. He said in part; "The particular problem that I have in mind in relation to research, is, in my opinion, more immediate, indeed, it is here now. That is research which will result, among other things, in better utilization of gas and disposition of combustion products, and perhaps make possible the building of entirely new appliances for domestic use, as well as developing and bettering present appliances, so that the industry can compete successfully with other fuels and meet the demands of the millions of new customers who will soon be on the market for our product if we are wise in our planning."

After a report by the treasurer of A.G.A., Ernest R. Acker, President, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., and the election of officers for the coming year, Mr. Acker, as chairman of the Committee on War Activities, presented a paper on "The Gas Industry in War," which will be found elsewhere in this issue.

"War Production Problems as They Affect the Gas Industry" was read by J. A. Krug, Director-General for Priorities Control, War Production Board.

Mr. Krug listed the next six months as the most critical of the war as regards materials; after this the man-power situation may well be the most critical. He feels the drive on our man power is just starting and that soon all physically fit men will have to be in the Army or Navy and suggested the gas industry lead the way in the use of women for such work as meter reading, testing and later for labor.

Mr. Krug said the gas industry should move ahead at once in a program of voluntary rationing of gas to domestic customers in order to protect its resources for the war demands it will have to meet—the civilian economy must be pinched to a bare minimum.

In a paper titled "The Future of Natural Gas Industry" J. French Robinson, President East Ohio Gas Co., Cleveland, O. said "we should at least be grateful for the note of optimism in our proceedings which implies that there will be an "after the war," as of course there will be, and we will be ready for it. That's what we are for."

Continuing he said "The common saying that "many things won't be the same as they were before this war," can be accepted as true. It is also true that there will be no serious or permanent social losses due to this war. The human race isn't built that way. Whenever it finds any thing, or any way, better than the old way, you can depend on it that the new will replace the old. This is true even if a nation or a people has to go through the hell of a war to find out what is better for it. Millions of hearts will be broken, and millions of lives will be sacrificed, and those who had fortunes will be without them, through the agency of this war. But there will also be some lessons learned and, barring a complete collapse of civilization as the outcome of this war, what we have learned will be put to use.

To be concrete again, and taking 1941 as our basis, we find one of the present natural gas co-ordination districts with known reserves of natural gas estimated at 65 trillion cubic feet, or 76% of the total. Another district and across the continent from that one, is a district with 5 trillion 250 million cubic feet of known reserve natural gas supply, or 6% of the total. Yet the former district, with 76% of the known national reserve supply, in 1941 utilized only 1 trillion 300 million cubic feet, or 46% of the total annual consumption, while the latter district, with only 6% of the known national reserve, utilized 500 billion cubic feet or 18% of the national total. The answer to this problem is arithmetically and instaneously reduced to geographical terms, and these are simple terms of transportation.

All boiled down, natural gas requirements after the war will make still more acute the problem of balancing supply and demand geographically. The machinery for this, luckily, already exists and will have been improved and perfected in the ease and speed with which it functions. Experience is doing that now. It is obvious, also, that the successful integration of our industry with other industries effecting the mutual exchange of critical materials needed, will also be retained as a profitable lesson taught by this war."

R. L. Fletcher, Vice-President, Providence Gas Co., Providence, R. I. and chairman of the Committee on Domestic Gas Research outlined the program of the Committee up to date.

Natural Gas Meeting

Monday forenoon was given over to the meeting of the Natural Gas Section, the presiding officer being J. French Robinson, chairman of the Section. George S. Hawley, President, Alexander Forward, Managing Director and A. F. Bridge, Vice-President of the Association, each addressed the meeting.

Mr. Bridge discussed the important subject of manpower. He said I would like to speak briefly on a subject which is giving all of us much concern and must be given an increasing amount of attention in the future—namely, the shortage of manpower and what we can do about it. This is obviously a large problem with many ramifications, hence I shall attempt only to outline it.

While we are confronted with many uncertainties, much of the handwriting is already on the wall. In common with other industries, most of our current problems are attributable to war-created shortages—metals, fuels, transportation, and men. For some of these problems there is no apparent solution except to curtail our usage of the critical items and modify normal practices accordingly.

Despite general recognition of our industry as essential to the war program, the real extent of our future manpower shortage has only recently been indicated through pronouncements by the Director of Selective Service. The Director of Manpower is advocating early enactment of an all-inclusive National Service law which would establish labor priorities and provide for selective transfer of workers as between industries.

I believe this situation can be adequately met if we view it realistically, appraise our manpower, decide what occupations are indispensable, and proceed promptly to hire and train women and over-age men replacements. In making such a survey we must answer two fundamental questions—Will the man be drafted; and can we get along without filling his job?

Curtailment of less essential services and activities will provide some measure of relief; and, due to materials' shortages, this has already occurred in the fields of sales and construction. For companies engaged in gas distribution, appliance servicing absorbs a sizable proportion of total remaining man-hours; and while selective curtailment of this activity presents a difficult problem, to be avoided as long as possible, we may be forced to reduce it to cover hazard calls only. Other possible curtailments and substitute procedures which are being widely adopted by public utilities are bi-monthly or quarterly meter reading, and elim-

New A. G. A. Officers For 1942-1943

President—Arthur F. Bridge, vice-president and general manager, Southern Counties Gas Company, Los Angeles, Calif.

Vice-President—Ernest R. Acker, president, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

Treasurer—J. L. Llewellyn, insurance manager, The Brooklyn Union Gas Company, Brooklyn, N. Y.

Directors—Two Year Terms

John W. Batten, vice-president and general manager, Michigan Consolidated Gas Co., Detroit, Mich.

James A. Brown, engineer in charge of gas operations, Commonwealth & Southern Corp., New York.

D. W. Harris, vice-president and general manager, Arkansas Louisiana Gas Co., Shreveport, La.

H. N. Mallon, president, Dresser Manufacturing Co., Bradford, Pa.

Hudson W. Reed, executive vice-president, The Philadelphia Gas Works Co., Philadelphia, Pa.

W. F. Rockwell, president, Pittsburgh Equitable Meter Co., Pittsburgh, Pa.

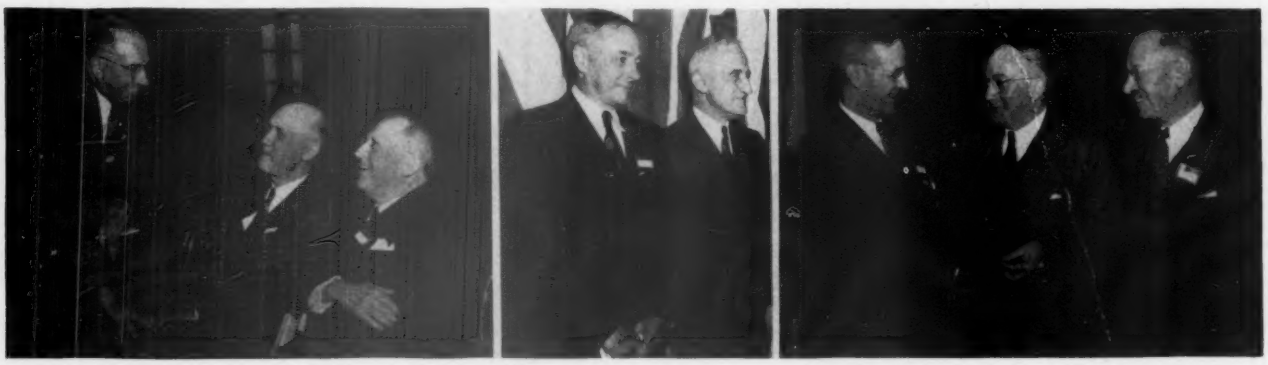
Herman Russell, president, Rochester Gas & Electric Corp., Rochester, N. Y.

Marcy L. Sperry, president, Washington Gas Light Co., Washington, D. C.

T. J. Strickler, vice-president and general manager, Kansas City Gas Co., Kansas City, Mo.

P. S. Young, chairman, executive committee, Public Service Electric & Gas Co., Newark, N. J.

R. G. Barnett, vice-president and general manager, Portland Gas & Coke Co., Portland, Ore.



Left: L to R: J. French Robinson, Chairman, Natural Gas Section, East Ohio Gas Co., Cleveland, Ohio; B. R. Bay, Vice Chairman, Natural Gas Section, Northern Natural Gas Co., Omaha, Nebraska; R. E. Wertz, Amarillo Gas Co., Amarillo, Texas
Center: A. F. Bridge, V.P., A.G.A., Los Angeles, Calif., and Alexander Forward, Managing Director, A.G.A., New York City

Right: L to R: D. P. Hartson, Chairman Technical Section, Committee on War Activities, Equitable Gas Company, Pittsburgh, Pa.; E. L. Sweeney, Boston Consolidated Gas Co., Everett, Mass.; H. B. Anderson, Vice Chairman, Distribution Committee, Philadelphia, Pa.

Photos A. Gordon King

Arthur F. Bridge

E. R. Acker

J. E. Llewellyn

ination of personal contact collections.

Though service curtailment appears as the logical first step, the two moves should go hand in hand. It isn't sound practice to suddenly lop off a wide variety of services and then attempt to fill the residual vacancies with an overnight recruiting program. That's why we need action now—so that the job can be done gradually and carefully.

I believe that first emphasis should be placed on recruiting. There are two reasons for this. We shall have increasing competition for these new types of labor, and recruits should be trained while the experienced employees are still here to do that job.

Furthermore, as we carry on recruiting, we'll learn more about the availability and performance of new labor groups; we'll find out how efficient women can be in various capacities; and where we can fit in the elderly man. As the picture clarifies, we'll know just how far it is necessary to curtail our normal activities, and the reduction in service will be gradual, thus minimizing ill effects on public relations.

It appears that the sooner we get underway with a planned recruiting and training program, the more likely we are to avoid serious upsets later. Even though it means extra expense to retain and train groups of new people now, that practice will result in long-range economy.

Obviously women constitute the only large labor reserve, but competition for them will be keen—is already in war-production areas. While as yet we have little information relative to their performance in utility jobs heretofore filled exclusively by men, experience in Europe in all lines, and in the aircraft industry in this country, leads to the conclusion that there are few occupations which they can't handle if given proper and sufficient training.

War Requirements in the Natural Gas Districts, were reported on by the chairman of each of the five districts. District No. 1, J. French Robinson, President, The East Ohio Gas Co., Cleveland, Ohio. District No. 2. Burt R. Bay, President, Northern Natural Gas Co., Omaha, Nebr., chairman. District No. 3, N. C. McGowen, President, United Gas Pipe Line Co., Shreveport, La., chairman. District No. 4, R. W. Hendee, General Manager, Colorado Interstate Gas Co., Colorado Springs, Colo., chairman. District No. 5, William Moeller, Jr., Vice-President, Southern California Gas Co., Los Angeles, Calif., chairman.

Mr. Burt R. Bay in reporting on District No. 2 stated:

Section Chairmen

Accounting Section — Chairman, L. A. Mayo, Connecticut Light & Power Company, Hartford Conn. Vice-Chairman, O. H. Ritenour, Washington Gas Light Company, Washington, D. C.

Industrial & Commercial Gas Section — Chairman, B. H. Gardner, Columbia Gas & Electric Corporation, Columbus, Ohio. Vice-Chairman, Charles G. Young, Springfield Gas Light Co., Springfield, Mass.

Manufacturers' Section—Chairman, John A. Robertshaw, Robertshaw Thermostat Company, Youngwood, Pa.

Natural Gas Section — Chairman, Burt R. Bay, Northern Natural Gas Company, Omaha, Nebraska. Vice-Chairman, R. E. Wertz, Amarillo Gas Company, Amarillo, Texas.

Residential Section — Chairman, B. A. Seiple, Jersey Central Power & Light Company, Asbury Park, N. J. Vice-Chairman, C. V. Sorenson, Midland Utilities Company, Hammond, Indiana.

Technical Section—Chairman, Harold L. Gaidry, New Orleans Public Service, Inc., New Orleans, La. Vice-Chairman, Charles F. Turner, East Ohio Gas Company, Cleveland, Ohio.

Harold L. Gaidry

SECTION CHAIRMEN AMERICAN GAS ASSOCIATION, 1942-43

L. A. Mayo

B. H. Gardner

B. R. Bay

B. A. Seiple

John A. Robertshaw

"Speaking of the ever-present need for the conservation of our natural gas resources, which applies equally to all natural resources, the old saying "it is an ill wind," etc., may apply to the present day rubber situation. Current reports are to the effect that in the compounding of rubber for the manufacture of tires, from the various kinds of synthetics, it has been found that the so-called 'soft' or 'furnace black' is superior in some respects to channel black, heretofore used when natural rubber supplies were available and that it is quite common to obtain a yield of 6 to 8 pounds of soft black from a thousand cubic feet of gas which is in contrast with about 1.4 pounds of channel black. We may witness a reduction in the use of natural gas for such purpose even though the output of black is increased after the completion of all butadiene and styrene plants now projected and under construction. Mention of this is made because of its possible bearing upon the future gas supply in the Texas Panhandle Field from which a substantial part of the gas for the markets in District 2 is presently obtained and about 78% of this country's carbon black is made. If practice proves what appears to be indicated, there should be a material reduction in the amount of natural gas burned to carbon black, which would extend the life of the Panhandle Field. Texas Railroad Commission records show that approximately 290 billion cubic feet of gas was used during the year of 1941 for the manufacture of carbon black. Substantially all of this black was made by the 'channel' process. If the 'soft black' process of manufacture had been used solely and the average yield were only 6 pounds per M.C.F., the gas volume referred to would have been reduced to 70 billion cubic feet."

The paper by Martin T. Bennett, Chief Gas Supply Section, Power Branch, W.P.B., Washington, D. C., and also the paper by E. Holley Poe, Director, Natural Gas Division, Office of Petroleum Coordinator of War, Washington, D. C., are printed in this issue of the JOURNAL.

Residential Section

The meeting was held Monday afternoon, E. J. Boyer, Chairman, presiding. Mr. Boyer, who is Sales Manager of the Minneapolis Gas Light Co., in his address stated:

"The present time is without question the most precious opportunity we have ever experienced, and by showing definite determination and fight now, will help assure us of a good chance in the future. We must keep our customers always aware of the conveniences of modern gas equipment, help them to a fuller use and better care of their present appliances, for some day new appliances will be needed by our old friends. Let's set the stage now for their desire to buy gas later on. To sum it up—now is the time for us to do the things we have always wanted to do, but for which we have never found the necessary time.

"The question which naturally comes to mind with every Sales Manager is—How can I best do this job which I feel should be done?—and the answer, I believe, lies chiefly in the work of our Home Service Departments; for, through them you may interpret your plans to the public. It seems far more necessary now than at any time during our history to maintain a Home Service Staff sufficient in number to do the job well.

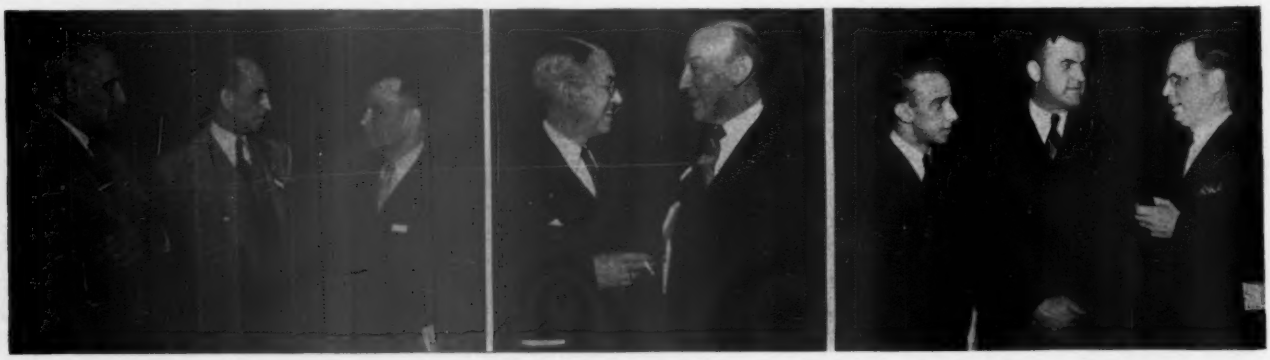
"In peace times I am sure you would agree that advertising plays an important part in our business. In war it is just as essential. I am going to read a few trade names well known before the last war but whose makers discontinued advertising during the First World War. Here they are: Blue Bird, Star-Rite, Hoosier, Notox, Sellers, Seeger, Shinola, Bunte. I am sure you remember all of them. They, unfortunately, stopped advertising and today they are practically out of business.

"In our advertising space we should use that style of copy that will remind customers about the Conservation Program offering suggestions on saving fats, rubber, tin cans; promoting National Nutrition Program; Uncle Sam wants it to last. In fact, salvage everything for which there is no need in the home; and by all means urge everybody to buy War Bonds. By this kind of cooperation our customers will soon learn that the Gas Industry is doing its part in the war effort."

R. J. Vandagriff, Sales Manager, Laclede Gas Light Co., read a paper on the subject of maintaining customer contacts during the war, and another paper titled "Planning and Preparing for Post-War Sales" was read by C. V. Sorenson, Supervisor, New Business, Northern Indiana Public Service Co.

Technical Session

The Technical Section held its meeting Monday afternoon, with H. L. Gaidry, Chairman, presiding. After the election of officers, Ernest R. Acker, Chairman A.G.A. Committee on War Activities, presented a paper titled "The Techni-



Left: L to R: R. E. Kruger, Rochester Gas & Elec. Corp., Rochester, N. Y.; Carl A. Schlegel, United Engrs. & Constructors, Inc., Philadelphia, Pa.; A. M. Beebee, Rochester Gas & Elec. Corp., Rochester, N. Y., (Chairman, Post-War Planning Committee)
Center: E. R. Noppel, Ebasco Services, Inc., New York City, and R. H. Burdick, Southern Natural Gas Co., Birmingham, Ala.
Right: L to R: Wm. H. Ganley, Falley Petroleum Co., Chicago, Ill.; Richard W. Stafford, Connelly Iron Sponge & Governor Co., Chicago, Ill., (Co-authors of the paper, "The Value of Gasoline for Gas Making Purposes—An Operating Study"); L. J. Eck, Minneapolis Gas Light Co., Minneapolis, Minn., (an associate)
Photos A. Gordon King

cal Section's Place in the War Effort."

Mr. Acker said this war is a technician's war and now more than ever before in the history of the world the technical man's work is of paramount importance. Emphasis was placed on the problems of tin content of solder and the substitution of gasoline for oil in gas making. As regards the latter, residual low-grade gasoline of around 40 octane will be available in large quantities soon introducing into the market a product with no present market. It was recommended that gas men cooperate fully to bring about the possible use of this product.

D. P. Hartson, Equitable Gas Co., Pittsburgh, in his report as chairman of the Technical Section's Committee on War Activities, discussed the many contributions of his committee, and stated that the present problem of the technical man is to *do more with less.*

J. H. Wolfe, Consolidated Gas Electric Light and Power Co., Baltimore was absent and his report "Conservation of Gas Oil," was presented by L. J. Willien. He told of the work being carried out on substituting low-grade gasoline for gas oil. From now on this fuel is to be renamed and called Motor Fuel Distillate.

The following committee reports were presented: Technical Sessions Committee on War Activities, D. P. Hartson, Chairman. Gas Production Committee, R. H. Arndt, Chairman. Conservation of Gas Oil, J. H. Wolfe, Chairman. Tin Content of Solder, C. S. Goldsmith, Chairman. Operation of Public Utility Motor Vehicles, Jean Y. Ray, Chairman. Chemical Committee, R. J. Sheridan, Chairman. Gas Conditioning, H. D. Lehman, Chairman. Research on Organic Sulphur, Dr. E. W. Guernsey, Chairman. Distribution Committee, C. S. Goldsmith, Chairman. Nearly all of these reports are in print and can be had from American Gas Association headquarters.

Industrial and Commercial Session

The session started with a luncheon on October 5th. The regular session was in charge of George F. B. Owens, Chairman. There were presented reports of committee chairmen, and the rest of the meeting consisted of an open discussion sponsored by the Managing Committee on problems in connection with the use of gas in war production.

The following partial list of subjects gives evidence of the scope and importance of the topics considered:

1. Industrial and Commercial gas operations under Limitation Orders L-31 and L-174; public relations under limitation orders;

2. Are any criterions being developed for determining terms of acceptance of industrial temporary loads on the basis of adequate return and amortization over a short period?

3. What are most important things industrial and commercial salesmen can do to help war effort? What measuring stick can be used to determine if gas company contacts with industrial and commercial customers are being adequately maintained during war conditions?

4. All factors considered has the position of gas in the commercial cooking and baking fields been enhanced from the competitive and other angles by the experiences in the camps, war posts, etc.?

5. Maintaining commercial cooking equipment under war conditions, where A-1-J Priority or better is required for replacement of new equipment;

6. Experiences with auxiliary fuel and auxiliary fuel-utilization equipment for industrial customers;

Effect of above on future business;

7. Effect of Priorities, etc., on industrial gas equipment;

8. Recent progress in applying gas to aluminum heat treating;

9. Can industrial gas men effectively help small manufacturers secure war contracts?

10. All too frequently the statement is made that certain types of industrial gas loads are not profitable to gas companies. Should all activities be directed toward developing, advertising and publicizing only those processes that show increased thermal efficiencies compared with oil fuel?

Is it better to have a smaller load, all portions of which are regarded as definitely profitable, rather than larger loads with questionable profit?

11. Effect of national nutrition plan on relations with commercial cooking and baking customers;

12. Application of step rates, minimum bills, etc., to billing of industrial customers during periods of curtailment.

Accounting Session

The Accounting Section opened its meeting with a luncheon Monday noon, L. L. Dyer, Chairman presiding.

A series of open meetings was held in the afternoon for discussion of problems of labor and material shortages, bi-monthly and quarterly-meter-reading and billing plans, priorities accounting, insurance depreciation, taxation accounting, and other war emergency procedures. The Customer Activities Group meeting under the direction of G. W. Fuchs, Philadelphia, included committee presentations as follows: Customer Accounting, E. F. Embree, New Haven, chairman; Customer Collections, W. R. Seidel, Rochester, chairman; and Customer Relations, Ohmer Ullery, Columbus, chairman.

The General Accounting Activities Group led by Coordinator O. H. Ritenour, Washington, were divided into: General Accounting, R. E. Hull, Shreveport, chairman; Materials and Supplies, Carl H. zur Nieden, Philadelphia, chairman; Property Records, E. F. Wressell, Hammond, chairman; and Taxation Accounting, R. M. Campbell, New York, chairman. There was also an insurance meeting under the direction of Reginald Fleming, New York, chairman, to discuss war damage, vandalism, policy conditions, insurance values, rates, etc.

Home Service Breakfast

For the tenth successive year the Home Service Breakfast was well attended as usual.

Presiding was Jessie McQueen, Home Service Counsellor of the Association who substituted for Helen Smith, chairman of the Home Service Committee, unable to attend due to illness.

Initiated by W. C. Beckjord these meetings continue to hold an essential place during each convention.

An outline of the specific contributions made by Home Service was offered by E. J. Boyer, sales manager of the Minneapolis Gas Light Company.

George S. Hawley, president of the Association commended the work of the various departments in keeping with the general program of Nutrition in Industry.

Alexander Forward, Managing Director of the Association said in part:

Louis Ruthenburg, president of Servel, Inc., speaking at the Home Service Breakfast. To his left are Miss Helen Walsh of Chicago, Regional Director of the Office of Defense Health and Welfare; George S. Hawley, retiring president, and Alexander Forward, Managing Director of A.G.A. On extreme right Miss Jeannette Campbell of Minneapolis Gas Light Co., new Chairman of the Home Service Committee of A.G.A.

"Food supplies for ourselves and our Allies becomes of first importance and the proper use of food is vital to the war effort. This situation gives our Home Service women an unparalleled opportunity to do their share."

Jeannette Campbell, incoming chairman of the Home Service Committee outlined the work of the departments and the plans for the coming year.

"Eat to Beat the Devil," slogan of Servel Incorporated in their program of Nutrition in Industry, was well presented by Louis Ruthenburg, president of the Servel Company. "I think," he said, "it is a particularly splendid opportunity for Home Service because it is right down their alley and they provide the necessary final machinery of transmission that is so essential to the entire program."

R. S. Goodhart, M.D., discussed the relation of nutrition to morale and E. R. Acker, president of Central Hudson Gas and Electric Company and chairman of the Committee on War Activities of the A.G.A. laid stress on the need for home service in connection with all contacts toward fuel conservation due to governmental gas limitation orders.

AWARDS

Charles A. Munroe Award

The highest honor within the gift of the American Gas Association was conferred October 6th on W. M. Hepburn, vice-president of Surface Combustion, Toledo, Ohio. Mr. Hepburn received the Chas. A. Munroe Award at the Association's annual meeting in Chicago for having made the most outstanding recent contribution toward the advancement of the gas industry. Consisting of a substantial financial acknowledgment and engrossed certificate, the Award was made to Mr. Hepburn for his outstanding achievement in translating gas service in industrial utilization equipment.

W. M. Hepburn

Among the developments which have come under Mr Hepburn's direction and bear the imprint of his ingenuity and sound engineering ability are diffusion combustion, continuous gas carburizers, DX gas atmosphere, gas preparation machines, walking beam and a wide variety of material handling mechanisms on furnaces of the walking beam type, one-way soaking pits, normalizing for full finished automobile sheets for deep drawing, bright annealing of both ferrous and non-ferrous metals, radiant tubes and convection furnaces.

During the World War he served from 1917 to 1919 as Captain in the 112th Heavy Field Artillery of the 29th Division. He rejoined Surface Combustion in September 1919, serving in the engineering and sales departments. He was made vice-president of that organization in 1924 and in 1927 was elevated to vice-president in charge of engineering, in which position he has continued.

The Beal Medal

The highest technical recognition in the gas industry was conferred October 6th on R. E. Kruger, superintendent of gas manufacturing of the Rochester Gas & Electric Corporation, Rochester, N. Y., at the annual meeting of the American Gas Association in Chicago, Ill. Mr. Kruger received the Beal Medal for contributing the best technical paper to meetings of the Association throughout the year.

R. E. Kruger

The award was presented by the donor, Ernest R. Acker, president of the Central Hudson Gas & Electric Corporation, Poughkeepsie, N. Y., representing the family of the late W. R. Beal who established the award in 1897. It consists of a bronze medal and substantial cash payment.

The paper for which Mr. Kruger was so singularly honored is entitled, "Interesting Developments Concerning the Saving of Gas Oil By Mixing High B.t.u. Coke Oven and Blue Gas."

Mr. Kruger joined the Rochester Gas & Electric Corporation as cadet engineer in 1916 following his grad-

uation from the University of Rochester with the degree of Bachelor of Science. His entire business career has been with the Rochester utility, his present position being superintendent of gas manufacturing.

Awards Made to Home Service Directors

Three directors of home service departments of gas utility companies were honored at the annual meeting of the American Gas Association in Chicago on October 6, 1942 when they received the McCall's Magazine Awards for making the most outstanding contribution to the advancement of better living in the home through the promotion of domestic gas appliances and equipment.

Miss Joie Kammer Miss Florence Matheny Miss Jeannette Campbell

First prize of $100 and an engraved plaque went to Joie Kammer, home service director, New Orleans Public Service Inc., New Orleans, La. Second prize of $50 and a framed illuminated parchment was awarded to Florence Matheny, home service director, Southern Counties Gas Company, Monrovia, California. Third prize of $25 and a framed illuminated parchment was won by Jeannette Campbell, home service director, Minneapolis Gas Light Company, Minneapolis, Minn.

The contest was open to all home service departments in this country and Canada. Contestants were required to submit papers of 2000 words or less covering the work of their home service departments, divided as follows: aim of department, training of personnel, community activities, increase in scope of activities, and accomplishment of aim.

Gas Companies Win Milllon Man-Hour Awards

One division of the Oklahoma Natural Gas Company, Tulsa, Okla., and five divisions of the Ohio Fuel Gas Company, Columbus, Ohio, received merit awards on October 6 at the Annual Meeting of the American Gas Association in Chicago. The awards were presented for achievements in accumulating one million or more man-hours without a disabling injury accident. The awards, which were recommended by the Accident Prevention Committee and approved by the Executive Board, were presented by President George S. Hawley at the Association's General Luncheon on October 6 at the LaSalle Hotel, Chicago, Ill.

The award to the Oklahoma Natural Gas Company was made to the Oklahoma District of that company. The awards to the Ohio Fuel Gas Company were presented to the Elyria, Toledo, Northern Compressor Division, Columbus; Distribution Department, District No. 5, Mansfield; and the Southern Compressor Division, Columbus.

The Gild Wassail and Annual Meeting

The annual get-to-gether party of the Gild of Ancient Supplers, which is held by the Gild each year at the A.G.A. meeting, took place Monday evening. Some two hundred Supplers and Burghers, with invited guests, were on hand to enjoy the festivities.

A memento of the event—a leather wallet with a war saving stamp book containing $2.50 worth of stamps, was presented to each ticket holder.

Earlier in the afternoon the Gild held its annual meeting at which a motion was passed confirming the mail vote on two Amendments to the Constitution which made all Past Mayors officers of the Gild and placed the immediate Past Mayor on the Great Council.

Robertshaw Speaks on Post War Gas Appliance Design

A warning to gas appliance manufacturers to be prepared to meet post-war competition of an entirely new and unique character was sounded by John A. Robertshaw, following his re-election as Chairman of the Manufacturers' section of the Association. The wartime development of plastics, glass—and new metals introduces new basic materials which, Mr. Robertshaw said, show every promise of being adaptable to gas appliance manufacture.

"These materials," Mr. Robertshaw pointed out, "offer opportunity for new design in stoves, water heaters, and cooking appliances of all kinds. This can be so revolutionary in character as to make much of the present type appliances obsolete both as to construction and performance.

"Although gas appliance plants are now almost wholly converted to war work there is vital necessity for the industry to continue research work and be alert to the far reaching changes which are bound to be a post-war development."

Villeins, Yeomen and Burghers were arrayed in their best bib and tucker.

The Gas Industry in War

By
Ernest R. Acker
President
Central Hudson Gas and Electric Corp.,
Poughkeepsie, N. Y.

SINCE the declaration of war it has been my privilege to act as Chairman of the Association's Committee on War Activities and to work closely with the various sections and committees of the Association and particularly with the Headquarters Staff in New York and Washington on many matters of importance to the industry and its war effort. In this work I have also had the opportunity to meet with the representatives of various government agencies and in all cases have been tremendously impressed with the sincerity, ability and singleness of purpose with which these men are tackling the war problems. I am convinced that by and large the men upon whom the country is depending to administer its war agencies are guided by one primary motive in their consideration of all problems—the strengthening and furtherance of the war effort. The response of the gas industry has been notable and I am confident that the industry will live up to the spirit and letter of the commitment made by President George S. Hawley to the President of the United States on December 10, 1941, when he pledged, on behalf of the Executive Board of the American Gas Association, the "full cooperation of the gas utility industry of America to our Government in the national crisis."

The Committee on War Activities is composed of only six members broadly representative of the natural and manufactured gas industries on a regional basis, and was so constituted to provide for quick decisions and prompt action in the present emergency. It is the successor to the Committee on National Defense so ably guided for two years or more by Mr. George F. Mitchell of Chicago and which was largely responsible for the excellent advance preparation of the gas industry for the actual requirements of wartime operations. The functions of the Committee on War Activities may be briefly summarized as follows:

1. **To take action promptly in an emergency on matters originating with Government war agencies, the Executive Board or members of the industry.**
2. **To promote the coordination of the war activities of the several sections and general committees of the Association.**
3. **To consider, authorize and sponsor any war activities which may be proposed by these groups and to initiate or assign to section committees any activities which the committee believes to be essential.**
4. **To make recommendations to the industry and to take the necessary steps to assure their full consideration by member companies.**

The committee has not attempted to pre-empt the functions of existing committees or to duplicate activities already being effectively conducted. It has received the wholehearted cooperation of the officers, headquarters staff, sections and other committees of the Association and has achieved its purpose only because and to the extent that the full facilities of the organization were available to it. The committee has little to report of its own accomplishments—it has much to report of the accomplishments of the Association as a whole.

Limitation Orders

The work of the Committee on War Activities has been equally applicable to all branches of the industry with the exception of the Manufactured Gas Limitation Order and the use of oil in water gas production. The committee was not in existence as such at the time of the issuance of Limitation Order L-31 on Natural Gas which, in any event, was properly a matter for the direct consideration of the Natural Gas Section. This section promptly grasped the situation and has ably assisted the War Production Board and the Office of the Petroleum Coordinator in the administration and enforcement of the order. The committee is informed that the procedure has worked smoothly, cooperatively and expeditiously and to the satisfaction of the war agencies.

On August 25th the War Production Board issued Limitation Order L-174 applicable to manufactured gas. Prior to the issuance of this order, officials of the Power Branch of the Board held informal discussions with members of the industry, including members of the Committee on War Activities, and gave full opportunity for comment and discussion on the purposes and provisions of the order. The order is reasonable, ably drawn, provides for suitable exceptions and appeals, and has been accepted as satisfactory by the industry. The industry is now being asked to cooperate with the government in the promotion of fuel conservation through a public educational program. In this connection representatives of the industry, including the Chairman of the Publicity and Advertising Committee of the Association, have met with officials of the Power Branch of the War Production Board and have agreed to draft suggested advertising material for the gas industry for submission to the government agency. Recommendations as to the preparation of this material and how it will be made available to member companies were made at the meeting of the Executive Board.

The policy of the War Production Board, on appeals from the provisions of Limitation Order L-174 prohibiting sales of gas for new space heating installations, has been clearly stated in the case of several individual member companies. In the case of my own company, permission was requested to sell gas to replace oil for domestic and commercial space heating up to 200 installations. This request was based on the fact that the company's maximum daily sendout which occurred in the winter of 1939 was 75% of the company's total generating capacity and that a 20% reserve would still be available after the addition of the new space heating load. In addition, the company stated that approximately 50% of the oil otherwise required would be saved through the substitution of gas for oil burning equipment. The company has on hand the necessary equipment for 175 conversion burner installations. In a reply dated September 24th, Mr. Herbert S. Marks, Acting Chief Power Branch stated as follows:

"Your application of September 15 for relief from the restrictions upon the delivery of manufactured

gas for the operation of space heating equipment under paragraph (e) of Limitation Order L-174 has been reviewed.

"We regret to advise you that on the basis of the facts set forth in your application, you are not entitled to make deliveries of gas for the operation of the 200 space heating installations specified in your application.

"We feel obliged to see that no further demands are made on existing manufactured gas plant facilities for space heating purposes, because space heating can invariably be accomplished with some other fuel, and large deliveries of gas for such a use can easily threaten the delivery of gas to war production plants during the winter periods of peak consumption."

I cite this as an individual case which may not be a precedent for other cases involving different conditions.

Early in its deliberations the Committee on War Activities approved the creation of a special committee of the Residential Section on Coordination of the gas industry with the National Nutrition Program. This activity, together with the outstanding work of our home service people has received unusually high and spontaneous commendation from governmental agencies and demonstrates clearly the value of the organization and promotional work on home service which the Association has sponsored for many years.

The Salvage Bureau

In January of this year the committee urged the creation of a salvage bureau by the Association which was immediately established under the supervision of Mr. John West, Secretary of the Residential Section. This program was undertaken prior to the initiation of the War Production Board activity and has resulted in the exchange of large quantities of materials and equipment by member companies. Lists of surplus materials have been furnished to the War Production Board but to the best of our knowledge have not been circulated by that agency. It is interesting to note that several companies which opposed the submission of surplus material lists in the early part of the year have recently obtained needed materials or equipment through the use of such lists. The salvage bureau has made surveys of the availability of used turbo blowers and coal gas ovens for the War Production Board and has been instrumental in obtaining materials and equipment for several cantonments and for numerous industries producing war materials.

Appliance Order L-79

In connection with Appliance Limitation Order L-79 the Committee on War Activities requested the Residential Section to determine by survey the number of gas ranges in utilities' and dealers' stocks, with a view to appealing for release from the provisions of the order of such ranges as were not suitable for defense housing requirements. To date we have been unsuccessful in this effort but are now conducting a second survey as of September 15th at the request of the government for use in planning the future production of ranges.

Many gas company executives are gravely concerned with the increased intensity of the competitive activities of certain electric manufacturers with governmental agencies concerned with housing projects. We believe that their activities have already resulted in uneconomic decisions by certain federal agencies and that their representations are based on unfair comparisons and unsound reasoning. To combat this situation the committee requested the appointment of a special committee to assemble material in cooperation with manufacturers of gas appliances, as to weights of critical materials required for various combinations of utility services. Figures as to electrical installations were developed by combination gas and electric companies interested in presenting factual and defensible data. The results to date indicate that the use of proper gas equipment offers possibilities for considerable saving of critical materials in war housing projects, and the committee will shortly determine the manner in which this data can be most effectively used.

Handbook on War Protection

One of the outstanding accomplishments of the Association in which the committee has been involved was the publication by the Technical Section of the handbook "War Protection of the Gas Industry," which has recently been completed and put in the hands of all member companies. This publication was edited by the Headquarters Staff under the supervision of the Technical Section's Committee on War Activities and stands as the Bible of the gas industry on the emergency protection and operation of gas facilities. At the request of the Office of Civilian Defense, Mr. C. George Segeler of Association Headquarters revised a portion of the text entitled "Notes for Air Raid Wardens" for publication by the governmental agency. These notes, possibly with some changes, are now in the Government Printing Office and will shortly be ready for distribution to state and local Civilian Defense Councils. The Office of Civilian Defense has expressed its appreciation of this work.

Upon the receipt of a request from the Federal Power Commission, the Committee on War Activities approved the temporary assignment of Mr. Segeler to assist the Federal Power Commission and the Army in setting up a plan for inspection of gas plants for protection against sabotage and espionage, and also to assist in the schools for inspectors conducted in various parts of the country. Our member companies have cordially cooperated in this work and reports to date indicate that company executives are much pleased with the inspections and with the suggestions received.

War Risk Insurance

At the request of the committee, the Insurance Committee of the Accounting Section undertook a study of War Risk Insurance Coverage, and later, in cooperation with the Insurance Committee of the Edison Electric Institute, assembled data as to utility risks which resulted in a substantial reduction in bombing and other war insurance rates applicable to public utility property. A large part of the credit for this important accomplishment is due Mr. Reginald Fleming, Chairman of the Association's Insurance Committee.

The Employee Situation

It seems obvious that all companies will experience increasing difficulty in retaining the services of expert employees of draft age. A responsible representative of the Manpower Commission recently stated flatly to a group of public utility representatives that they would within the next few months find it impossible to retain the services of single men (and within one year, of married men without children) under 45 years of age, unless they could convince the Draft Boards that the services of these men were indispensable to the war effort. He further stated that the Manpower Commission will not in the future agree that any man is in a key position when a new man can be trained for the job within six months. He cautioned the utilities that all employers should be-

gin immediately to train men, who would probably not be subject to draft, to replace those who are certain to be called within the near future. In the meantime the Committee on War Activities has been working closely with the Association's Committee on Personnel Practices to improve the status of gas company employees with the Selective Service Board and Manpower Commission. The burden of this work with the Washington Agencies has fallen on Mr. J. D. Dingwell, Jr., of the Washington Gas Light Company, Chairman of the Committee on Personnel Practices, who has rendered invaluable service to the industry through his contacts with governmental representatives. We are currently informed that a list of critical occupations in the gas industry is in process of preparation by the Manpower Commission, together with similar lists applicable to other industries declared to be essential to the war effort in Release #279. Representatives of the Manpower Commission have refused to allow our representatives to collaborate in the preparation of the gas industry list on the grounds that other industries would request that same privilege and the Commission would be swamped with industry representatives each demanding attention and prompt action. Unfortunately, some Draft Boards refuse to grant the gas industry the same status as the electric because of the absence in our case of a specific Occupational Bulletin containing a list of critical occupations. The Selective Service Board requests that such cases be brought to its attention so that the state directors involved may be properly instructed. In the meantime, the Committee on Personnel Practices is proceeding with the preparation of a list of critical occupations to be used in case the list now being prepared by the Manpower Commission requires amendment. Mr. Dingwell has been assured that omissions will be taken care of promptly after the list has been issued.

Oil Conservation

The Office of the Petroleum Coordinator for War has directed certain questions to the Association looking to the conservation of oil in water gas production through the substitution of low grade gasoline or liquefied petroleum gases for present enrichment oils or through reduction of the B.t.u. content of the gas. This matter is under the joint review of the Committee on War Activities and the Special Committee on Oil Conservation of the Technical Section. Mr. John H. Wolfe of Baltimore, Chairman of the latter committee and Vice-Chairman of the Technical Section, has submitted a reply as to the use of gasoline for enrichment purposes, after consultation with a large number of member companies. The reply indicates that gasoline can be used for water gas enrichment without insurmountable technical difficulties but points out that its use would involve serious hazards, modification of storage, pumping and piping facilities, and important economic questions which cannot be solved until further information as to price, quantities available and source of supply is furnished by O.P.C. A reply as to the reduction of B.t.u. content is now in preparation. Tests on the use of gasoline for enrichment purposes have been recently run at Rochester, N. Y., and Fond-du-Lac, Wisconsin, and a further test will shortly be run at Kingston, N. Y. The cost of 6000 gallons of straight refinery-run gasoline to be used in the test at Kingston by my own Company will be 13½c per gallon. The results of the tests already conducted are available through Association Headquarters. Pending the determination of the gasoline question, the Association has received continuous assurance from the Office of the Petroleum Coordinator that crude oil would be available for manufactured gas company requirements during the coming winter, and companies have been advised to fill their storage tanks for the winter's supply as soon as possible.

Tin Content of Solder

Based on information requested from the Consolidated Edison Company of New York on the results of their experiments with the use of 30% tin content solder, the Tin Branch of the War Production Board made inquiry of the Association's Washington representative as to whether a reduction from the 40% content now authorized for meter repair work, to 30%, was now in order. At the suggestion of the Committee on War Activities, officials of the Tin Branch were advised that the industry would immediately undertake additional tests to determine whether a 30% tin content solder could be used advantageously and that the committee would be glad to advocate amendment of the Tin Limitation Order if the results of such tests were satisfactory. The industry has been fully advised as to the formula and technique used by the New York company and the results of numerous tests have been under review by the Distribution Committee of the Technical Section. Companies which have used the new solder successfully and who are satisfied with its performance report that the use of the new formula requires careful training of the meter shop personnel and shows a reduction in tin usage only after operators have become thoroughly proficient in the new technique. Other companies report no success in obtaining tight joints or in reducing the total quantity of tin used—so that to date there is no unanimity of opinion and the industry is in the position with a governmental agency of being unable to reach an agreement within its own councils on a matter involving the use of an extremely critical material. I feel that this is a matter which merits the attention of the first executives of the industry, and it is my hope that further discussions at this meeting will clarify the situation and put the industry in a position to make an important contribution to the war effort. I call attention to the fact that an important executive of the WPB recently warned a meeting of public utility representatives in Pennsylvania that a year from now the restrictions under which we are now operating will seem mild by comparison with those which will be in effect at that time.

Association Headquarters is daily besieged by war agencies requesting information of every conceivable kind concerning the gas industry. Much of the information requested is a duplication of information already furnished to other governmental agencies but it is rarely possible to persuade one agency that it should obtain the information from the other. It has been said that democracy can work only in the presence of pressure groups and one supposes that rivalry for power is human.

A.G.A. Administration

In the face of these and countless other present difficulties we are extremely fortunate in having the unusually able and constructive services of our Managing Director, Major Alexander Forward. His even tempered, thoughtful disposition, his warm personality and his understanding of our complex and varied problems make him an invaluable member of our council at this time. I am convinced that it is largely because of his far-sighted policies and capable administration that the work of the American Gas Association has

(Concluded on page 54)

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REYNOLDS Engineering policy of close cooperation with the trade has resulted in the development of a competent Engineering Department. This service is available upon request and insures proper installation necessary for Safe, Efficient Control.

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- Single or Double Valve.
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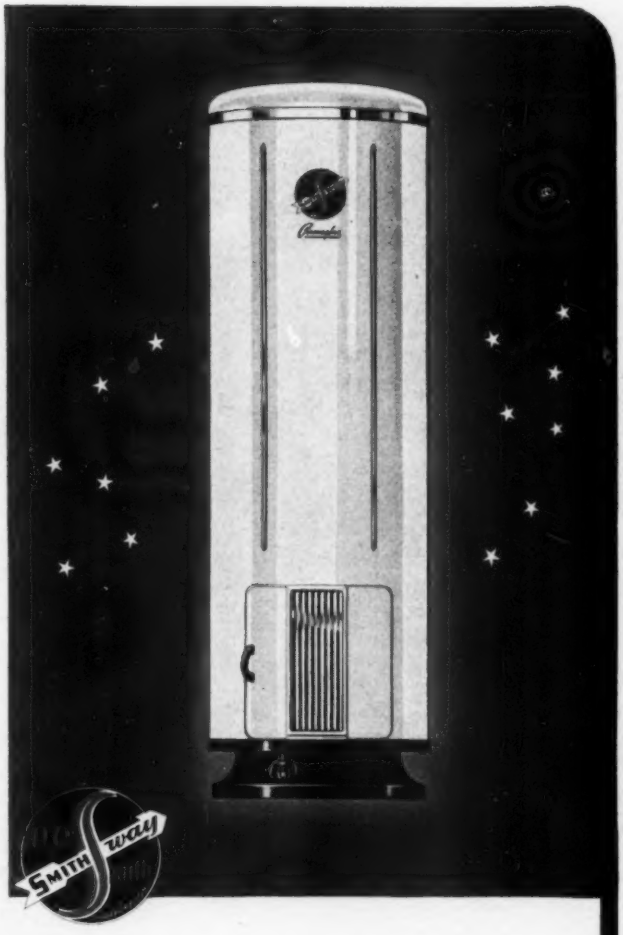

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Although introduced but a short time ago, A. O. Smith Permaglas Water Heaters skyrocketed to stardom in the water heater business.

Today, we cannot manufacture this water heater. You know why. But the star that shone so brightly shall shine again. And then, those who sell this heater will find it a profitable source of customer satisfaction.

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GLASS LINED
WATER HEATERS

A. O. SMITH Corporation
Milwaukee, Wisconsin

Our Joint War Job

By
E. Holley Poe

Director of Natural Gas—Natural Gasoline Division
Office of Petroleum Coordinator for War
Washington, D. C.

E. Holley Poe

THE NATURAL GAS industry today represents one of the nations most vital energy resources. It serves eight million domestic, commercial and industrial customers in 34 states about 1,900,000,000 MCF annually. In excess of 50% of this volume is for industrial purposes which directly or indirectly affect the war program.

Since 1938 the send out of natural gas for industrial and commercial purposes has increased by more than 10% per year. Indications are that this year will exceed last year by 25% and in some areas as much as 40%. These great increases are the result of the War Production Program. As never before in its history the natural gas business is one of supply and demand with a restricted deliverability resulting from limited supply of steel for augmentation of natural gas pipe lines and development of natural gas reserves. These facts present problems which can be solved only by the joint efforts of you men of the industry and those of us in government whose duty it is to cordinate the activities of your industry with the war program. The cooperative solution of these problems is our joint war job.

Indications are that we have ample gas reserves, with few exceptions, strategically located to meet demands. Whether these reserves will be recovered for utilization depends entirely on how we conserve both oil and gas, how they are produced, and upon the constructive cooperation between the producers, the transporters, the distributors and the properly constituted regulatory authorities.

Conservation is the biggest word in this phase of supply segment of the war program. Likewise when we talk about the conservation of oil and gas we are talking about the life span of the oil and gas industry. When we deal with it we are dealing with the industrial future of the nation and with the health, comfort and future of our citizens.

Conservation of natural gas reserves and conservation in the production, transmission, and utilization of natural gas must be faced positively by all of us. Sound policies must be encouraged and sound laws and their proper enforcement must be sincerely advocated. We must continue to support and encourage studies designed to develop efficient methods for the utilization of gas produced with oil if we are to avoid the wasteful blowing of gas to the air which has too often characterized this type of production in the past. Substantial progress along these lines has been made in the past and when the war program started we were on the threshold of even greater progress toward true conservation.

The war emergency will undoubtedly cause many dislocations in our traditional methods of operation. But by the same token the dire necessity of this war program will teach us much about better production methods, better transportation and distribution methods, better ways and means of conserving the product, and ways and means of preventing the economic dissipation of a vital natural resource.

Your group and our group must work together in keeping abreast of the quick changes that are taking place. Our joint efforts are essential if we are to perform our neutral duties in the war program and still conserve as much of this natural resource as possible for the post-war rehabilitation and reconstruction program.

This war is the first thing before the house. Victory in it will strain our resources, require our best talents and utilize the maximum of our energies. Its prosecution requires the utmost conservation of critical materials, which in our industry means largely metals and particularly steel. This being true, I should like to emphasize that where we, in the Natural Gas and Natural Gasoline Division, review your applications to acquire or use critical materials we are guided by the theory that the most effective promotion of the war program demands the minimum expenditure of critical materials consistent with proper and adequate development of gas reserves and resources required, and only as required, for such program.

Our recommendations are made only after cautious study with a view to determining whether or not additional gas is needed for the immediate future, or whether a proposed overall development program designed to drill a specific number of wells is necessary to meet a proven required deliverability.

I know you are all familiar with the terms of Conservation Order M-68, as amended and supplemented and Preference Rating Order, P-98-b, the orders which affect to a large degree, your acquisition and use of critical materials. I shall not take your time to discuss the terms of these orders in detail. Members of our staff are here with me and will be glad to answer any specific questions you may have.

With respect to M-68, however, there is one element which I feel should be maintained. That order, as you know, is designed to conserve critical materials, by limiting their use in the production of oil and natural gas. The order is flexible; it can be altered or supplemented from time to time to achieve stricter control over the use of materials consistent with the demands for oil and gas.

It has been and will continue to be the policy of the Office of Petroleum Coodinator to recommend changes in that order whenever the demands for critical materials or oil and gas dictate such changes. However, we are fully conscious of the importance of oil and gas to a nation at war. In our actions we attempt always to weigh the full implications of all of these considerations.

We do not like red tape any more than you do. We must, however, have the facts. The gathering of these facts should not be considered in the category of red tape. The proper use and application of these facts help get the answer we need for the war effort, the public welfare and for your own good and future..

Justice Oliver Wendell Holmes once said, "To rest upon a formula is a slumber, that prolonged, means death." Some of the normal formulas under which we operated before the war, just will not work now. It takes faster, more drastic action now. Wartime action always has and always will cause serious dislocations as respects the normal formulas for doing business. If any of you have been trying to enjoy a "slumber" please wake up and join the parade of effort directed to winning the war.

The Office of Petroleum Coordinator for War is organized as a cooperative agency of industry and government. You have your Coordinating Committees nominated from the industry that are a vital part of the organization. From these Committees the Petroleum Industry War Council draws its membership. All phases of the industry are represented and all integral segments are engaged in doing their "dead level" best to win the war.

The Office of Petroleum Coordinator does not like to operate with a system of force orders. More satisfactory results, in most cases, are being reached by a mutual, unselfish understanding of the problems at hand and a cooperative spirit in their solution.

The Petroleum Coordinator has stated and restated several times that it is his belief that the Petroleum Industry of which Natural Gas is a part, "could do its best in the war if the industry were kept healthy and robust." He has further expressed his thankfulness "that government and industry have devised and set up machinery for meeting this problem together.—Only the duration, the extent and nature of the war can determine the result, but, in any event, our prospects are better than they would be if this machinery, the O. P.C., were not being used.—Nothing of the sort has ever been attempted before, at least on the scale we operate.—It is a unique arrangement, and one which has convincingly demonstrated its effectiveness."

Presented at the 24th Annual Meeting American Gas Association, Chicago, Ill., October 5 and 6, 1942.

Water Gas

By
Fred J. Pfluke
Chairman
Sub-Committee on Water Gas
Rochester Gas & Electric Corp.,
Rochester, N. Y.

THIS YEAR has brought with it many new problems for the consideration of the Water Gas Operator. Practically all of the problems are related to the war activity. Among the most important to come to the attention of the Water Gas Committee were the following:

1. The use of substitute fuels for coke in a water gas machine. While there has been no general shortage of coke for water gas-making purposes there are certain sections of the country threatened with a shortage. This is due chiefly to the transportation situation. However we have been warned that as steel production is increased, a general shortage may occur and for this reason the use of substitute fuels has been of great interest to all operators particularly those who have never used any fuel but coke.

Investigations of this subject by the committee revealed that while anthracite and bituminous coals have been successfully used for years as water gas fuel no one has yet succeeded in duplicating the capacities obtained with coke as a fuel.

Discussion at the Production Conference Luncheon meeting indicated that with minor changes in operation there were no serious difficulties involved in using these substitute fuels. It was definitely established that a reduction in capacity must be expected.

2. Increasing capacity of water gas sets was of great interest to the industry. Investigation of this subject revealed no startling developments. R. J. Horn of the Central Hudson Gas and Electric Corporation described a possible method of increasing capacity by using a different type generator lining which made possible the use of a thinner wall thus increasing the internal diameter of the machine.

3. With the increasing difficulty of obtaining replacement parts made of vital materials such as steel, alloy iron, bronze, etc. the subject of maintenance has become of great importance. Investigations by the committee revealed that welding and "metallizing" is playing a vital role in salvaging parts that are now almost impossible to obtain. A paper on the use of electric welding in maintenance was prepared and presented at the Production Conference by E. W. P. Smith of the Lincoln Electric Co. A brief resumé of the paper is included in this report. George Johnson of the Minneapolis Gas Light Co. prepared a resumé of the successful experience some of the larger companies have had with the use of "metallizing" in reclaiming worn bearings and shafting.

4. The heavy loads forced upon the natural gas man as a result of the war have brought him many problems, one of the most serious of which is methods of meeting peak loads with standby equipment. This involves the production of high B.t.u. gas in water gas sets. The problem was investigated by the committee and an excellent paper on the subject was prepared and presented by Mr. Willien at the Production Conference. The complete paper follows this report.

5. One of the newest problems confronting the Water Gas Operator is the possibility of being required to use gasoline for gas enriching in place of oil. With the increase in demand for fuel oil in war industry and for military needs and the possibility of surplus gasoline in some sections of the country because of gas rationing in others it may be necessary, if it is possible to do so, for the Water Gas Operator to use gasoline in the water gas sets. Some preliminary work done on this problem indicates that gasoline can be used to replace gas oil.

The solution of these problems and the many new ones to come will tax the ingenuity of the gas engineer to the utmost. The committee urges all operating companies to keep in close contact with the Association. New ideas which have been successfully developed should be passed on promptly in order that the industry as a whole may more completely meet its obligations in the war effort.

Presented at the 24th Annual Meeting, American Gas Assn., Chicago, October 5-6, 1942.

IT'S THE OFFENSE THAT WINS BATTLES

Since 1940, the Nazis have won battle after battle. Why? Because they've waged one offensive after another.

ALTER EGO: Yes, but they've been able to do that. They started their *war production offensive* 10 years ago so they had a big edge on us in tanks, planes and guns. Then we really started competing.

So competition forces progress. *Look how in two years, our* production offensive *has already surpassed that of the Axis—turning out better weapons and more of 'em. These new arc welded M-4 tanks, for example. They'll soon be in our fighting offensive.*

ALTER EGO: It's thrilling but don't let it get us complacent. Haven't we learned never again to be caught unprepared in war . . . or in *business competition* either?

There you have it! Let's start TODAY waging a planning and designing offensive *so we'll be on the alert with better welded products and lower costs to get the upper hand on our competition the minute the post-war Battle for Business begins!*

Ask your inner self if it isn't the offense that wins battles.

THE LINCOLN ELECTRIC COMPANY
CLEVELAND, OHIO

then I said to myself—

IT'S A GREAT JOB —WELD DONE!

Electric Welding Practices in the Gas Industry

Weld Surfacing

SURFACING by use of arc welding provides a ready means of reclaiming worn parts of equipment. The process eliminates waiting for replacement parts and provides wearing qualities equal or better than the original part.

Electrodes are available for the deposition of different types of surfaces, each having its own characteristic. These electrodes may be grouped according to the ability of their deposits to resist:

1. Impact; which may be light or heavy in force, or may tend to deform the surface of the metal or cause cracking or chipping.
2. Abrasion; which may be either a grinding action due to contact of metal with sand, gravel and similar abrasive materials, or a sliding, rolling or rubbing action of one metal against another.
3. Impact and abrasion in combination, with one moderate, the other severe or both moderate or severe.
4. Corrosion; including actions of various chemicals, water and also oxidation or scaling at elevated temperatures. May be gaseous or liquid, or gaseous and liquid in combination.
5. Temperature; which may exist in conjunction with each of the above conditions.

Electrodes may be used to obtain surfaces of fairly high carbon steel. The exact hardness depends upon the rate of cooling and, to a lesser degree, upon the carbon content of the supporting metal on straight carbon steel. With natural cooling, hardness may be 20 to 45 Rockwell C. Peening increases hardness, for example, from 33 to 40 Rockwell C. Quenching in cold water at 1450 degrees F. increases hardness to 50 Rockwell C.

Where shock and abrasion are factors, deposits may be air hardening alloy steel. Hardness of the deposits ranges between 40 and 45 Rockwell C. Depending on carbon content of the supporting metal, hardness may run as high as 52-55 Rockwell C. Parts of Equipment subject to sliding, abrasive action, batter or repeated pounding and impact may be surfaced effectively with this type of deposit.

Where the surface is subject to sliding actions, and the parts must retain their dimensions under high temperatures—as, for instance, in metal cutting—a deposit equivalent to high-speed tool steel may be obtained. Such deposits, in original condition, will have hardness of 50-55 Rockwell C, provided it is not diluted too much by the supporting metal. When this dilution is kept to a minimum, as by using 2 beads, hardness may be as high as 60-62 Rockwell C. The surfacing metal retains its characteristic at rather high temperatures, approximately 1000 degrees F.

Where an abrasive scouring action but very little, if any, battering or impact is encountered, as on agricultural implements, an abrasion resisting self-hardening alloy may be used to excellent advantage. Moderate peening increases the hardness from approximately 20-30 Rockwell C., to approximately 50 Rockwell C. The deposit retains its toughness with maximum hardness at the surface which is cold worked. The deposit may be hot forged.

When the type of deposit required to meet a given service condition is known, the selection of a suitable electrode is readily made. Table I describes six different conditions very frequently met with in hard facing and the qualities of deposits from six well known electrodes which meet the conditions.

TABLE I — HARDNESS OF DEPOSIT (ROCKWELL)*

Type of Deposit	Electrode Application	Single Layer		Multiple Layer		Resistance to Corrosion	Heat Treatment
		As Deposited	Work Hardened	As Deposited	Work Hardened		
Medium Carbon Steel	Dense, tough surface to resist wear & deformation	25 C	30 C	28 C	32 C	Average	Same as for straight carbon steel
High Carbon Steel	Dense, tough surface of moderate hardness to resist shock & abrasion	30 C	35 C	35 C	40 C	Poor	Same as for straight carbon steel
Medium Carbon Alloy Steel	Resist wear due to rolling or sliding friction under high pressures	40 C	43 C	50 C	50 C	Fair	Air hardening
High Speed Steel	Cutting Edges Metallic friction	58 C	58 C	62 C	62 C	Fair	Like high speed steel
Chromium Base Alloy	Resist abrasion and corrosion	50 C	50 C	54 C	54 C	Excellent	Self-hardening
Semi-Austenitic High Carbon Alloy Steel	Resist impact and severe abrasion	45 C	60 C	27 C	55 C	Good	No heat treatment Self-hardening on cold working
High Mn.-Nickel Moly Steel	Resist severe impact and abrasion	93 B**	50 C**	93 B	50 C	Fair	Like high Mn. steel
Stainless Steel	Resist corrosion, severe impact and abrasion	35 C	48 C	85 B	42 C	Excellent	Like stainless steel

REMARKS: Values given are average obtained under laboratory conditions. Results will depend on such variables as current, mass of parent metal, size of bead, rate of cooling, etc. In most cases no heat treatment is necessary or desirable. Notes on heat treatment are only to identify the type of deposit and provide a guide in case of an unusual application where some heat treatment is used. It should be understood that these hardness values are with no heat treatments.

* On mild steel ** Manganese steel

Reconditioning Line Pipe

Many natural gas pipe lines are repaired in operation with full pressure on by means of arc welding. Welding under pressure is considered more safe than welding a line that is full of gas without pressure because under this latter condition, explosive mixtures of gas and air might be encountered.

Where small leaks are encountered, a quick bead can be run over the leak to stop it, then a permanent weld made. If the leak is bad, a patch of cardboard jacket should be clamped to the pipe and then welded around

Left: Coupling bolts were torch-cut and pipe was rolled away from ditch.

Right: An inspector chalk-marked all corroded areas which were to be built up with weld metal.

the patch. As a precaution, it is advisable to have a shovel-full of loose dirt and a gas fire extinguisher handy when welding under leaky conditions.

Many companies find it necessary in repairing gas lines to recondition their couplings as well as the pipe. In a case such as this, where the line is given a complete overhaul, service on the line is naturally discontinued. There are two general practices used in reconditioning lines in this manner.

Some companies do their reconditioning work at a central plant; others do this work along the pipe line right-of-way. The procedure used in each case is practically the same. Where the central plant method is used, the worn sections of pipe are usually replaced with new or reclaimed pipe as soon as they are removed, thus requiring a stock of replacement pipe.

The following procedure is used by a large gas company in a complete overall reconditioning job with all work done along the right-of-way, The particular case is that of a 16-inch line, 25 miles long, originally laid in 20-foot lengths, joined by couplings, about 25 years ago. The steps are:

1. After ditch was dug, pipe was lifted out and supported on timbers over ditch.
2. Coupling bolts were torch-cut and pipe was rolled away from ditch.
3. Pipe cleaning crew with hammers and chisels removed earth and rust scale. Corroded spots were well cleaned to expose sound metal.
4. An inspector chalk-marked all corroded areas which were to be built up with weld metal.
5. Four 20-ft. pipe lengths were joined into one 80-ft. section. Joints were plain end butt type with back-up ring. The pipe was lined up and tacked.

Left: Mounted on dollies, the pipe was roll-welded with two passes of 5/16-inch mild steel shielded arc electrode, averaging 3 joints per hour per man. Each section was stress-tested and drop-pressure tested.

Right: Filled-in areas varied in size from small spots to large patches a foot square.

6. Mounted on dollies, the pipe was roll-welded with two passes of 5/16-inch mild steel shielded arc electrode, averaging 3 joints per hour per man. Each section was stress-tested and drop-pressure tested.
7. Corroded pits were filled in with 5/16-inch mild steel shielded arc electrode.
8. Filled-in areas varied in size from small spots to large patches a foot square.
9. Majority of line was relaid without protective coating. It is claimed that the reconditioned line is in better shape than the original when new.

Welding Cast Iron

Cast iron welding may be done with a metallic arc using steel electrodes. When using this type of electrode care should be taken in regard to (a), contraction of the weld metal (steel) after deposition, (b), absorption of carbon by the weld metal and rapid cooling which result in hard weld metal.

The shrinkage or contraction of steel from a molten state to a cool state is greater than that of cast iron, going from a molten state to a cold

state. Therefore when the molten steel from a steel electrode is deposited on cast iron the steel will shrink more than the cast iron on which it is deposited, causing a residual strain in both the weld metal and the cast iron. A straight bead of weld metal deposited on a horizontal surface of cast iron will be in tension if allowed to cool without further treatment. This is due to the fact that the steel is trying to contract its length by an amount which is proportionate to its change in temperature. At the same time the cast iron on which the weld metal has been deposited will be stressed due to the pulling action of the weld metal on the cast iron. Since the cast iron is weaker, the usual occurrence (particularly when the bead of weld metal is long) is a break in the cast iron just back of the line of fusion.

Repairs made to cast iron block of compressor engine by welding with "Ferroweld" electrode.

A cast steel worm resurfaced with one layer of "Abrasoweld" after worm was worn to a point where formerly it would be discarded at a saving of $49.50.

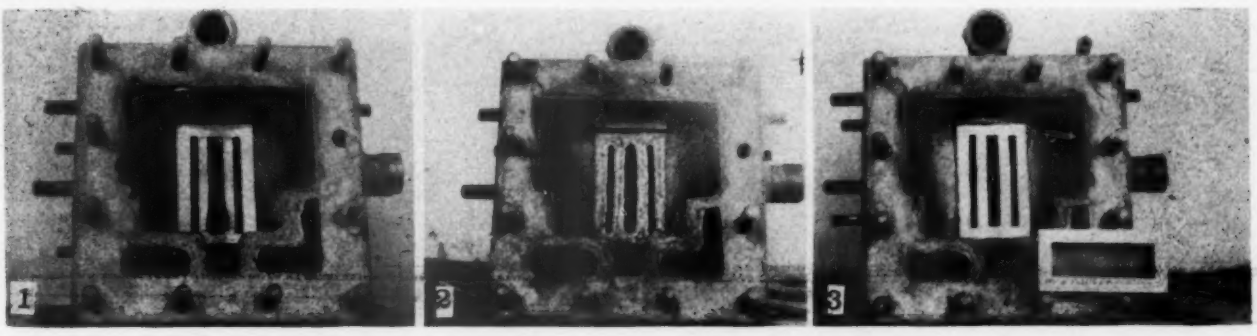
It is evident that the greater the length of the weld in a straight length the more strain, since the strain is cumulative. Therefore, if a bead is curved there is a tendency to reduce this cumulative effect.

Another method is to deposit weld metal in short lengths and allow each to cool. For example, weld ½ minute and then allow weld to cool for 3 to 5 minutes. By depositing small welds in various parts of the job one weld is allowed to cool while depositing metal in another location.

The third method is to upset or peen the deposited weld metal lightly while it is still hot, before it has a chance to cool and contract. This causes the weld metal to stretch. In many cases the best method to pursue is to use a combination of the above three methods.

When steel weld metal is deposited on cast iron of large area and the cast iron being cold with the exception of the weld area, the weld metal and the cast iron in its immediate vicinity are cooled quickly. During the process of welding the deposited metal absorbs carbon from the cast iron. Thus the deposited metal becomes high carbon steel, which when cooled quickly is extremely hard. As previously explained, when molten cast iron is cooled quickly its own combined carbon is increased. Therefore, the weld area in the parent metal, when cooled quickly, results in increased hardness of the casting and a tendency to brittleness. Thus in such cases hard, unmachinable material is formed. However, in most repair jobs such a condition presents no difficulties, inasmuch as machining is rarely required. If machining is necessary there are several methods by which the weld metal and weld area in the cast iron can be made machinable; one is to heat the entire casting, or if expansion will cause no difficulty, heat weld and adjacent parts only, to a dark cherry red and allow to cool slowly by covering with asbestos or sand or other heat retention material.

The seat of a large cast iron valve became worn and by restoring the worn surfaces with arc welding a saving of approximately $200 was made. Fig. 1 shows the valve before repairs were made. Fig. 2 shows the seat built up with arc weld metal. Fig. 3 shows the seat after it was machined.



How W.P.B. Orders Affect the Natural Gas Industry

By

Martin T. Bennett

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War Production Board,
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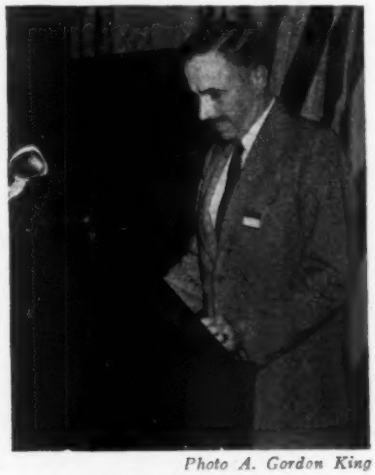

Photo A. Gordon King
Martin T. Bennett

I APPRECIATE very much this opportunity to discuss for you the general plan of the War Production Board orders which affect your operations most closely. Naturally my discussion must be general and must be limited because many, if not most, of the War Production Board orders affect the industry in one way or another.

War Production Board orders affect the flow of materials and equipment which the industry requires. Orders P-19-h on projects, and P-46 on maintenance, control the use of materials in expanding and maintaining your facilities. Mr. Krug is going to tell you more about the materials situation tomorrow. The picture has been an everchanging one and an ever-darkening one. The orders and requirements have had to change to keep pace with the changes in quantities of supplies and in the necessities for critical materials. War Production Board orders affect many other necessities of the natural gas industry such as the availability of electric power and telephone and transportation services, but none of these is as important as those orders which directly affect your handling of your own commodity.

Mr. Poe is going to tell you about those War Production Board orders which have been assigned for administration to the Office of Petroleum Coordinator for War. His particular concern is the development of the supplies of the commodity which you have to secure in order to continue your business. The Power Branch is concerned with those orders which have to do with the handling and the disposal of these supplies. In both cases, we have to relate administration of the orders to the problems of securing materials adequate for fulfilling the industries' functions. The list of involved critical materials is varied, but by and large, steel is the big item.

Probably I do not need to tell you how critical the steel situation is. Most of you have felt it when you have attempted to secure pipe which is one of the most critical of the finished forms of steel. I do not need to tell you that you have a most precious product to sell because many of you are experiencing or are expecting difficulties in serving the loads which you now have.

The tradition of the industry that it deals in an abundant and cheap fuel is now a handicap. The apparent ease with which natural gas has been brought from flush producing areas to market areas has made it difficult to realize that in terms of additional critical steel, natural gas is not cheap. The ever-expanding requirements within many market areas have made it no longer abundant. We may have to revise the industry's slogan, "You can do it better with gas," to a new slogan—"For the duration, you had better not do it with gas."

The reason for this is obvious to you. You know better than anyone else that many ordnance, armament and other war production operations have to be done with gas which isn't leaving much surplus for less essential uses.

If a million or more tons of new steel were to be made available to the industry next year for extending to new supply areas and for reinforcing transmission lines, our problems would seem quite simple compared to what we probably will have to deal with. Such a large portion of the 86 million tons of the annual steel production is far too great an inroad on the necessary programs for armament and shipping and synthetic rubber and the expansion of steel production itself. Something else must be done!

The other thing that has to be done, and has to be done first, is to utilize the present facilities to their maximum before any new facilities are provided. By present facilities I do not mean those of any particular ownership but any facility which may be available to an area which needs more gas regardless of ownership of those facilities. The industry has a tremendous responsibility to utilize all of the steel which it has already obtained. We cannot put new steel where old steel can do the job.

The War Production Board Natural Gas Limitation Order L-31 provides the authority for securing maximum use of present facilities in the war effort. The integration, the curtailment, and the allocation provisions furnish the methods by which the mobilization of the gas industry is being effected. The Power Branch has the dual responsibility for the utilization of existing facilities as well as for giving priority assistance for securing necessary new facilities.

All this may be expressed in another way. The war aim of the natural gas industry must be to utilize existing transmission facilities with as near to a 100 per cent load factor as the limited use of additional critical materials will allow. A number of methods for increasing the transmission load factors may be listed. I hesitate to give a list of them in numbered order because the order might signify some order of importance or of value. Which one or which group of several of these methods may be best for a given situation will depend upon that situation and upon the relationship of that one to neighboring situations of supply and requirements.

One of the most promising devices for increasing load factor is the storage of gas at or near the markets. In some cases, storage may be available in partially or totally depleted fields without requiring the use of much critical materials. In one case, at least, storage of liquefied natural gas has provided a very large volume of peak delivery. Unfortunately, it has required critical materials and will not supply peaks over very wide duration.

In another case we secured help

through the war powers of Defense Plant Corporation. Complete possession was taken of the land rights in an oil field in order to devote them to a unitized storage project. Subsurface rights can be condemned for war purposes in a manner which will allow immediate possession. We may find this a fruitful source of help.

Another most obvious treatment of the problem is to have one company transport gas for another in order that transmission capacity will not be duplicated. Unfortunately, in a given area, the peak loads of all transmission companies usually come at about the same time so that this method would only help substantially where one of the companies had excess capacity.

Another method, akin to storage in many respects, is the operation of manufactured gas standby facilities near to the markets. This is similar to storage because as a matter of fact, it requires storage of solid or liquid fuel which is converted to gas as it may be needed. A somewhat analogous and similar method can be employed by utilizing customers' standby heating facilities to supply as much of their requirements as may be necessary and possible during peak periods. Usually this is accomplished as part of the curtailment procedure.

Curtailment, of course, is a commonly used method of increasing load factor. The natural gas companies have taken on large volumes of curtailable load in order to increase the volumes of gas handled and sold during those periods when their lines were not loaded to capacity. To a very considerable extent, the economics of the industry have been based on curtailability of loads. In these times, however, curtailment has taken on a changed and new meaning. The old idea was to curtail the larger loads first because they could be reached the most quickly and probably to some extent that will have to be continued for temporary periods. However, the provisions of Order L-31 provide for curtailment first of those customers who will be least affected in their contributions to war production. Further than that, under war time pooling arrangements, curtailment schedules will be developed by regions instead of by companies' territories. Curtailment may have to be classified still further as the trend of all industry to war purposes continues.

One cannot talk about curtailment without thinking of the possibilities of voluntary curtailment by house heating customers. We are faced with the danger that some customers will attempt to supplant their curtailed allowances of house heating oil by using their gas stoves as auxiliary heating devices. No doubt, many will do this if they are not acquainted with conditions. I have such faith in the American, however, that I cannot believe that if the companies take their customers into their confidence, a great deal of help cannot be obtained by voluntary curtailment. The customers, however, will have to know first what is needed from them and second, why it is needed.

It is only fair that customers should be told through your advertising mediums what the effect would be of this kind of heating. Vague generalities that gas is a critical material is not enough. They have been hearing that gas is good for a long time and would not distinguish that from promotional advertising. Some and possibly many with central house heating equipment could be persuaded to subject themselves to the same reduction in room temperature that is contemplated for oil heating customers in the oil-rationed areas. The time for the voluntary curtailment appeal will soon be here although many companies have already done much by promoting insulation, window stripping and other heat conservation methods.

We can generalize somewhat further on methods for increasing transmission load factor. As a general rule, for example, any productive capacity and any reserves near to markets should be preserved for peak load requirements. In fact gas can be injected for storage in such fields during off-peak periods. I know of one company that is storing gas on top of another company's gas in the second company's field and both will draw from the field in peak periods.

Generally pipe line capacity should be preserved for the serving of loads which are near the end of the line where loads near to the origin of the line may be supplied from local fields. Where transmission capacity is not the sole cause of shortages, those who have adequate supplies can contribute greatly to the overall load factor by furnishing help to those who do not have adequate supplies. The relief which may be expected will depend upon the ability to give and the necessity to receive.

One of the most obvious methods and I hope it won't have to be extensive, is to convert large users of natural gas to other fuels which can be furnished without overtaxing other facilities.

The petroleum industry is already in the unfortunate position of having to depend greatly on this solution. The breakdown of part of the petroleum transportation as the result of submarine warfare and the addition of large new demands for liquid fuels has put the petroleum industry in the position of having to push as many of its customers as it can into the rather unwilling laps of its competitors. Probably the gas industry will be faced with having to do some of the same thing. Certainly some loads can be converted to other fuels where the conversion does not require too much critical material and where the conversion will not overtax transportation facilities. Some considerable trend towards this conversion can be seen, although some obvious cases have not yet been done because conversion takes time as well as critical materials.

You probably will find other methods of increasing overall load factor and may find methods for increasing certain pipeline capacities. Some pooling of standby gas engine compressors would make available a number of compressors which could be used for boosters on long sections of lines.

The long-term war program of the gas industry involves not only these steps which are encompassed within the industry, but involves also the programs for steel, for coal, for oil, for transportation in most of its forms and many other programs including armament. The matter of securing oil supplies for gas customers' standby facilities was never thought of as a serious problem before but in a number of areas, an extended curtailment of natural gas is going to throw a tremendous new load on oil distributing facilities. Some of the statistics in certain areas have seemed almost appalling.

The development of the Government's part of the war program for the gas industry is well beyond the questionnaire stage. From here on the plans will stem from individual studies of supplies, of plants, and of operations. These studies in turn will be related to requirements so that the industry will produce as nearly as possible, only that which is required, directly or indirectly for war production and for essential civilian services. I feel very keenly that those of us who are working on this problem in Washington cannot know too much about your individual problems.

In spite of the public utility or so-called monopoly aspects of the natural gas business, we must recognize that competitive position has been important to individuals within the industry. This applies not only to competition among fuels but also between various interests within the industry.

(Continued on page 48)

"CLEVELANDS" Have . . . For Over 20 Years

- RAISED PERFORMANCE LEVELS
- DECREASED INITIAL COST
- LOWERED OPERATING COSTS

★ Ever since its entrance into the ditching machine field, over twenty years ago, "Cleveland" has blazed a path of fresh ideas —constant improvement. • Unswerving continuance of this policy is our promise for the future, so that you, whenever you purchase a new Cleveland, can be assured of the most modern in engineering design, backed by the best there is in construction.

"Cleveland's" National Defense Cooperation is 2-Fold

1st—Supplies equipment for Defense Pipelines and all branches of the United States Military and Naval Services.

2nd—Releases thousands of tons of vitally needed steel for armament, tanks, ships, etc., because of weight-saving design and construction.

•

BUY WAR BONDS—TURN IN ALL SCRAP RUBBER AND METAL

THE CLEVELAND TRENCHER COMPANY

20100 ST. CLAIR AVE. *"Pioneer of the Small Trencher"* CLEVELAND, OHIO

"CLEVELANDS" Save More . . . Because they Do More

War-Time Operation Of A Public Utility Automobile Fleet

By

Barnard D. Connor

Superintendent of Transportation,
Boston Consolidated Gas Company

THE Boston Consolidated Gas Co. supplies manufactured gas in Boston and surrounding communities and electricity in the Charlestown District of Boston.

There are 291,609 gas and 6546 electric customers including many vital war plants. (See Fig. 1.)

Description of Fleet

The fleet consists of 92 passenger cars, 94 trucks and 27 miscellaneous units, including air compressors, trenchers, backfillers, cranes, heavy duty construction trailers, etc. Not included are 40 Street Division tool cart trailers.

Fig. 2 shows the distribution of the fleet as assigned to various departments.

Passenger cars have been used in preference to light trucks whereever it was practical to do so. For instance, househeating service, nearly all refrigerator service, hot water heater and range service, electric meter sets and removes are all handled with passenger cars, mostly coupes. In most cases special racks or bins have been installed back of the seat and in the rear compartment to accommodate the necessary equipment.

Half-ton panel trucks with special built-in compartments have been standard with us for many years for gas meter sets and removes, and for "Special Service"—24 hour emergency vehicles. For about a year we have had 9 "Special Service" trucks and 3 District Foremen's cars equipped with 2 way radios. Later 4 more sets were installed in pumping stations. They are Motorola Model FMT 30 mobile transmitters and Model FMR 13 receivers. (See Fig. 3 for typical ½ ton panel truck.)

1½ ton trucks with special 9 ft. bodies are standard for Street Division hauling of men and equipment, and with 12 ft. bodies for the operation of 105 C.F. air compressors through power take offs. (See Figs. 4 & 5.)

Larger units are used to operate 160 C.F. air compressors, also for vans, drip, line, crane trucks, and for towing heavy duty construction trailers. (See Figs. 6-7-8-9.)

Vacuum from the engine manifold is utilized in one truck for pumping drips. (See Fig. 10.) It is also used with a small vacuum tank to clear rust stoppages, and again for priming on centrifugal pumps.

Our trench digging equipment consists of:

One model 25 Bay City full revolving ditcher.

One model 95 Cleveland Baby Digger (See Fig. 11).

For Backfilling we have:

One Cleveland backfiller Tamper (Dragline type).

Two model 20 McCormick Deering tractors (on wheels) with Baker snow plows.

Also by bolting a blade on the bucket, the Bay City is used for pull in backfilling.

This construction equipment is manned by operators in the Transportation Division. Nearly all the other equipment is operated by

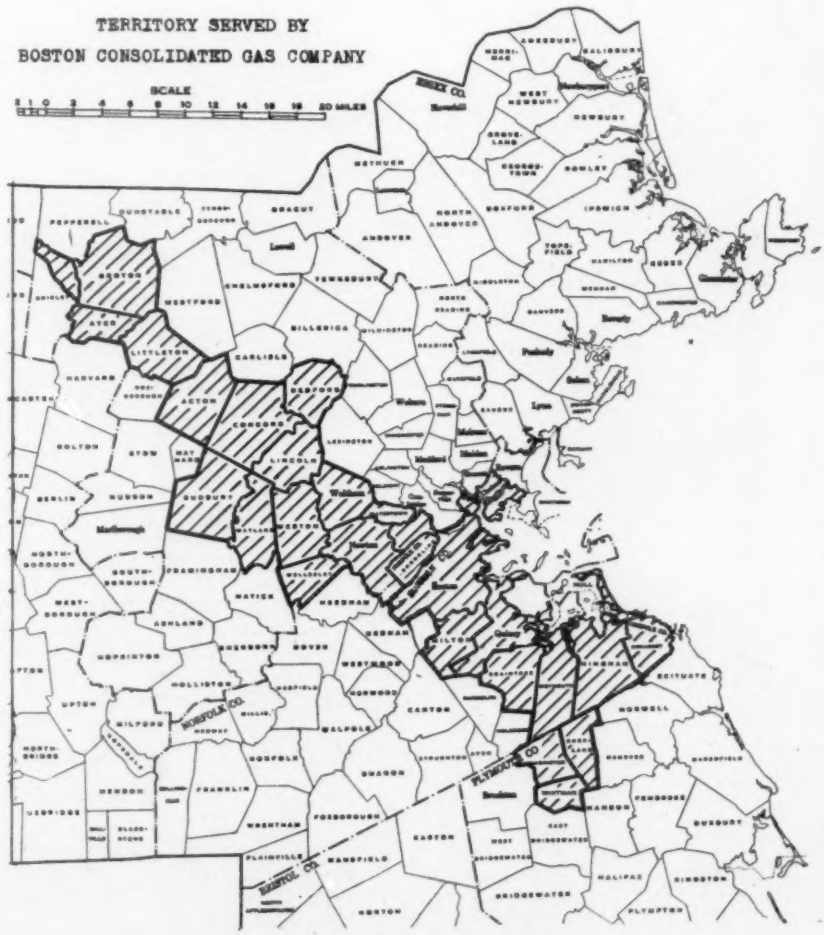

Figure 1. Map of Territory Served.

drivers reporting to their respective departments.

As a matter of general interest, an emergency Mobilization Plan for the Distribution Dept. is shown in Fig. 12.

Garage, Service and Maintenance Set-up is shown in Fig. 13.

Preventive Maintenance

Our first preventive maintenance system was started in December 1932 and its value was shown so that there has never been any question about our retaining it, although, of course many changes have been made in the details since that time. It was planned to make the system as simple as possible, avoiding the use of lengthy reports.

Gasoline oil, water, and tires are checked nightly when the vehicles come in. Responsibility for these items, as well as washing and wiping, is definitely assigned.

Tires at our Jamaica Plain garage have always been assigned to two garage men, one taking the even vehicle numbers and the other the odd. It has always been their responsibility to see that inflations are correct, valve caps on, and to report any condition needing attention. We have since assigned a mechanic who will concentrate on tires, checking on the entire fleet for inflations, valve caps, matched duals, damaged wheels, or rims, misalignment, wobble, cuts, bruises, nails and glass. He will also see that worn casings are removed and correct any thing that might shorten the life of our most important item—tires.

A very important link in the Preventive Maintenance chain is the **drivers report.**

Each garage is provided with a log sheet (See Fig. 14) on which are listed the vehicles normally kept there.

When a driver takes a vehicle out he signs the sheet and notes the time. When he returns he notes time, mileage, and the condition of the vehicle. Defects reported on the log sheet are remedied by the mechanics on duty at night.

Next come our standard **Preventive Maintenance Inspections** which will only be described briefly because of the detail involved.

First is a **Monthly Light Inspection,** performed when the vehicle is being greased. This is a quick inspection covering the safety items and battery, cooling, oiling and fuel systems, with particular attention to leaks, damaged brake fluid lines, and springs.

Inspection S was designed to take care of the vehicles garaged at the homes of executives and superintendents and kept there for emergency use only. This is a monthly inspection and is performed at the garage where the car is normally serviced. It covers gasoline, oil, water, tires, battery, starting, windshield wiper, horn, lights, clutch, brakes, and a check to determine if car is due for any other Inspection. These cars are also checked weekly by the men to whom they are assigned, in their own garages to see that there are no flats, no apparent leaks, that the motor starts O.K. and lights, horn and wiper operate satisfactorily.

Inspection A is our principal inspection, and is performed only at our Jamaica Plain Repair Shop approximately four times a year. This is a very thorough check up of the vehicle, including road test, chassis, safety items, body, motor, and wheel alignment. The necessary adjustments, repairs or replacements are made at this time or before the order is closed.

DISTRIBUTION OF FLEET BY DEPARTMENTS

Figure 2

Departments	*Pass. Cars*	*½ ¾ T. Trucks*	*1½ T. Trucks*	*Larger Trucks*	*Compressors*	*Misc.*	*Totals*
Central Street	11	2	12	4	9	..	38
Chas. Electric	5	2	..	1	..	..	8
Customer's Ser.	50	48	2	4	..	..	104
Everett	1	..	..	..	..	..	1
Executive	2	..	..	..	..	..	2
Gen. Distribution	5	..	..	..	..	..	5
Gen. Mfg. Const.	2	..	..	..	..	..	2
General Sales	1	..	..	..	..	..	1
Home Service	1	..	..	..	..	1	2
Laboratory	1	..	..	..	..	..	1
Pumping	1	..	..	..	..	..	1
Sales Display	..	1	..	..	..	..	1
Transportation	7	2	5	3	5	9	31
West Street	5	2	4	2	3	..	16
Totals	92	57	23	14	17	10	213

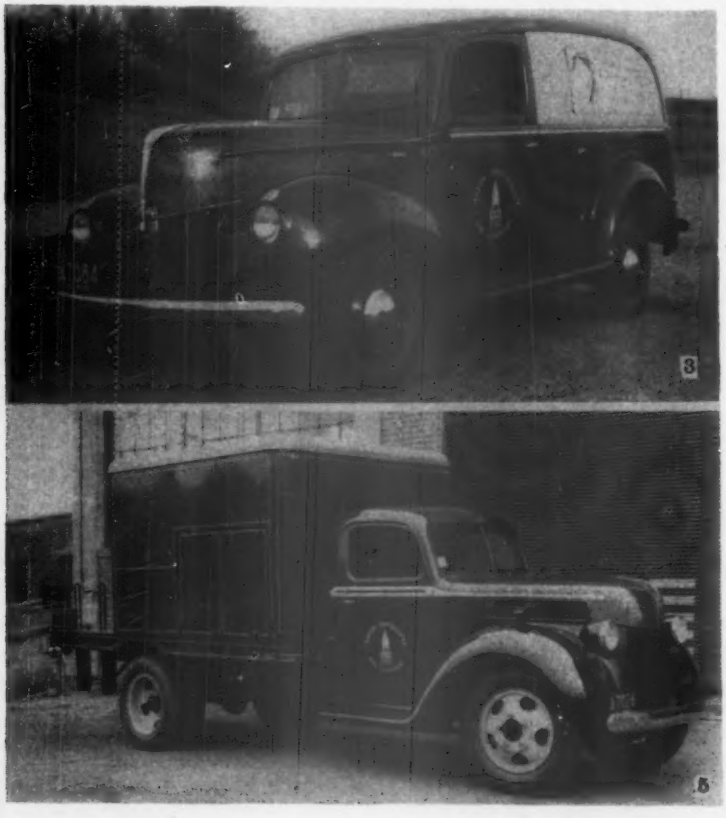

Figure 3. Half-ton Panel Truck. Figure 5. Ton and a half Street Division, 12 ft. body.

Some of the shop equipment used in this inspection includes:

Wheel alignment gages
Test lamp for starting circuits
Volt and amp meter for testing generators and voltage regulators.
Oscillograph for testing and adjusting distributors and ignition points.
Spark plug tester.
Exhaust gas analyzer and Vacuum Gage for adjusting carburetors.

Inspection B is a modified Inspection A and is performed at our Waltham and Quincy garages instead of Inspection A twice a year. This was started in June 1941 to reduce the mileage and expense of sending vehicles to Jamaica Plain. Certain items in the Inspection A are omitted because the shop equipment is not available outside our Jamaica Plain shop.

Inspection C is for air compressors, including engine or power take off, as the case may be. This is a thorough inspection comparable with our Inspection A, and is performed at Jamaica Plain 4 times a year.

Valves, Rings, and Rebores are not scheduled on a time or mileage basis, but when the need for them is shown by our regular scheduled inspections and our gas and oil records.

The forms used to record shop work are:

Repair Order (See Fig. 15)
Inspection Report (See Fig. 16)
Repair Summary (See Fig. 17)
Repair Record (See Fig. 18)

Conservation of Parts

It is becoming increasingly difficult to obtain replacement parts, so we must do our utmost to rebuild or repair and make the old part do.

We have been using gas and electric welding equipment for years in building up and hard facing worn parts on our digging equipment.

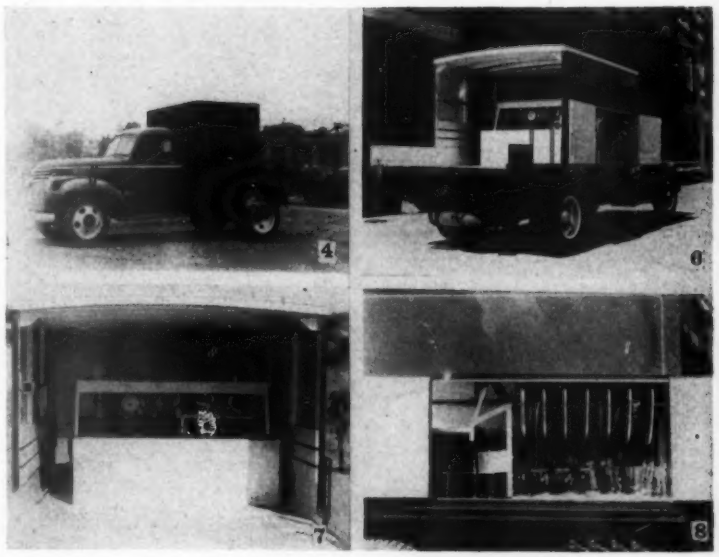

Figure 4. Ton and a half Street Division, 12 ft. body. Figs. 6, 7, 8. 160 cu. ft. combination.

Figure 9. Crane Truck.

Figure 10. Vacuum Operated Drip Truck.

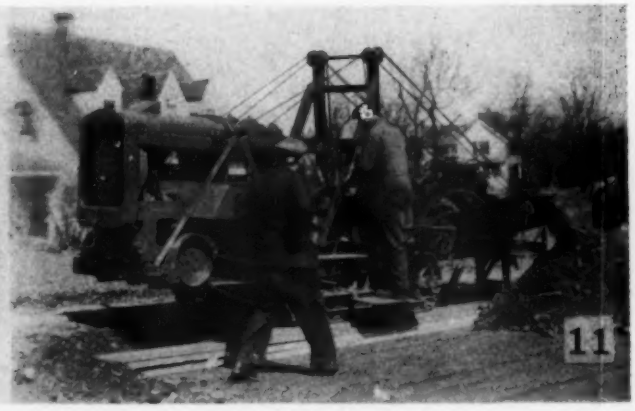

Figure 11. Cleveland Digger.

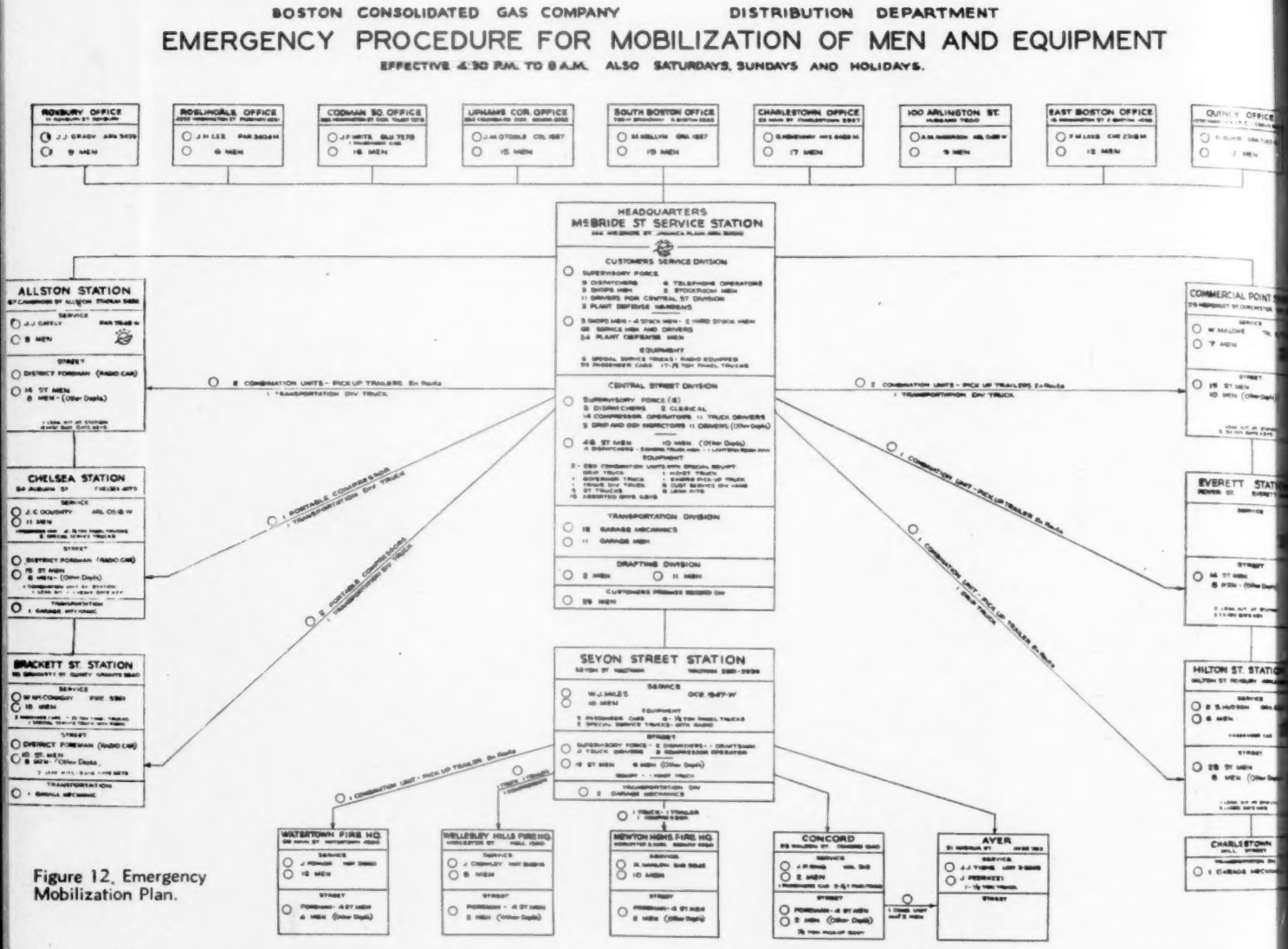

Figure 12. Emergency Mobilization Plan.

Such parts as buckets, bucket teeth, sprockets, rooters and digging rim segment teeth have been successfully rebuilt and hard-faced.

Worn power take off, and drive shafts, and a few crank shafts have been rebuilt to original size by spraying metal. Chrome plating of pneumatic tools has been successful. The point has now been reached where smaller parts such as water pump shafts, king pins, shackle bolts, pistons, and many others may be done in the same way.

For an excellent treatise on this phase of maintenance see article by W. J. Cummings in February 1942 issue of "Fleet Owner." Mr. Cummings is chief of the Maintenance section in the Office of Defense Transportation.

At this time I would like to call your attention to the effort being made by the Office of Defense Transportation to educate all truck owners and drivers in proper preventive maintenance.

In a booklet "America's Trucks—Keep 'Em Rolling" suggested inspection schedules are presented and instructions given both owners and drivers, which, if followed, should help materially to keep equipment in good condition.

The Society of Automotive Engineers has several committees working to provide the necessary data on ways and means of maintaining equipment.

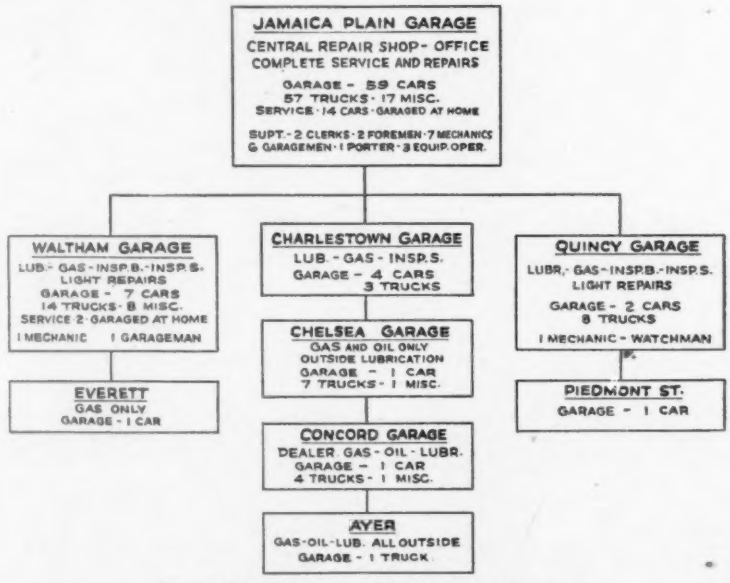

Figure 13. Garage and Maintenance set-up.

Storage of Vehicles

For detailed information on how to treat vehicles under various conditions of storage I recommend most highly the article in July-August issue of "American Gas Association

Monthly" by Jean Ray. Mr. Ray is chairman of the Motor Vehicle Committee A.G.A. and Vice-President in charge of Transportation and Maintenance Committee in the Society of Automotive Engineers.

Gas and Oil Handling

Most of this work is done between 4 p.m. and midnight after the vehicles are parked.

The amounts disbursed are posted daily opposite each vehicle. At the end of the month they are totaled and extended.

Mileages are reported on the log sheet daily by drivers. At the end of the month the readings are posted to our permanent "Gas and Oil Record" and the month's mileage recorded. (See Fig. 19). These records are grouped in the file by make and type so summaries and totals can be made up monthly. The Accounting Department posts the quantities of gas and oil and returns the file to Transportation Division Office. This form provides for the life record of mileage, gas and oil of each unit as well as any group of units, and readily allows comparisons between present and previous months or years.

BOSTON CONSOLIDATED GAS CO. DRIVERS' DAILY LOG SHEET

STATION DATE

CAR NO.	DRIVER	TIME OUT	TIME IN	ODOMETER IN	CONDITION OF VEHICLE

Figure 14. Log Sheets are 8½" x 11".

Form No. 275-SM-11-40

Date 19 **GARAGE REPAIR ORDER** Nº 32751

Unit D Description

Work to Be Done:

Item 1 Tires
" 3 Routine Repairs
" 4 Accident Rep. Item 0 Comp. Tools

Names | Dates | Hours | Tot. Hrs. | Rate | Amount

Signed:
Started at M. Odom:
Finished: at M. Remarks:
Signed:

Disbursement Ticket Nos.

Credit 636.1 Total Labor
Credit S-5 " Material
Credit 636.1 Miscellaneous
Net Total
Credit 636.1 Overhead %
Charge Acct. Div.
D Item

Est. by App. by

Figure 15. Repair Order is 8" x 4½".

DATE INSPECTION R. O. No.

UNIT D DESCRIP.

TOE IN:	LEFT	RIGHT
Caster		
Out Slant		
Camber		
Tool Check		
Test Lite		
Battery No.		
Battery Grav.		
Spark Plugs		
Ign. Points		
Fuel Pump		
Carb. Float L.		
Vacuum		
Oil Press.		
Gen. Chg. R.		
Anti-Freeze		
Tires		
Paint		
Cushions		
Fil. Cart. Ch.		
Battery In.		
Battery Out.		

COMPRESSOR TOOLS CHECK

Paving Breakers:
Rock Drills:
Spades: Rammers:
Chippers:

COMPRESSOR TESTS

Oil Pressure—Idle	
" " —Load	
Air Range	
Safety Valve B. O.	
Governor	
Throttle Valve	
Cyl. Unloaders	
P. T. O. Belts	
Engine Speed—Idle	
" " —Load	
" " —Max.	
Oil Press.—Idle	
" " —Load	
Gen. Chg. R.—Idle	
" " —Load	
Eng. Temperature	

Done by:
Foreman:

Form T-542 B. G. Gas Co. SM

Figure 16. Inspection Report is 8" x 5".

Driver Training

Education and training of drivers is essential in order to effect any real economies.

Intelligent, well trained, cooperative drivers can do more to save equipment and obtain the most out of it than any other factor with which we have to deal.

The starting point is of course in the selection of new drivers. Much has been said and written about this. Briefly, all new drivers should:

1. Pass a physical examination.
2. Have a State operator's license.
3. Pass a company driver's test, including knowledge of and observance of motor vehicle law, safety rules, intelligence, mechanical knowledge, and driving skill.
4. Undergo a periodic physical examination and driver's test.

All drivers new and old should be given a company driver's manual in which are the company rules for safe and efficient driving.

Insurance company and Auto man-

Form 676 B.C.GAS CO.

POST CAR NO UNDER REPAIR AND DATE — DAILY REPAIRS SUMMARY FOR MONTH OF _____ 19___
O-INDICATES NEW OR OVERHAULED PART — 2 FOLLOWING O NO INDICATES 2 PARTS USED

DAY	ENGINE: INSPECTION	VALVES	RINGS	OVERHAUL	TUNE UP	MISCELL.	ELECTRICAL: BATTERY	STARTER-GEN.	MAGNETO	DISTRIB.	IGN. PT.	SPK. RG.	LIGHTS	MISCELL.	FUEL: CARBURETOR	PUMP-METH.	MISCELL.	COOLING: RADIATOR	W. PUMP	MISCELL.	CLUTCH OR PTO	TRANSMISSION OR DRIVE BELTS	DRIVE SHAFT OR GOVERNOR	DIFFERENTIAL OR THROTTLE VALVE	BRAKES: ADJUST	RELINE	EMERGENCY	STEERING OR COMB. VALVES	AIR RECEIVER	TUBES	TIRES	AXLES-WHEELS	SPRINGS	SHOCK ABSORB.	DOOR GLASS	BODY	PAINT	ROAD CALL	MISCELL.	ACCIDENT NOTE	DEFROSTER	FUMES-DOOR	HORN	WIND WIPER	DAY
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
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Figure 17. Repairs Summary is 11" x 8½".

ufacturer's safe driving booklets are helpful and present important instructions in an attractive way.

Posters, bulletins, and notices are used to emphasize certain aspects of good driving and to criticize bad driving habits.

Safety meetings provide an excellent opportunity to discuss problems with drivers and supervisors.

Interdepartmental contests in accident reduction foster a spirit of rivalry which can be used to advantage. State and national contests in safe driving help to keep before the drivers' minds the importance of careful, efficient driving and provide an opportunity of rewarding them with safe driving buttons.

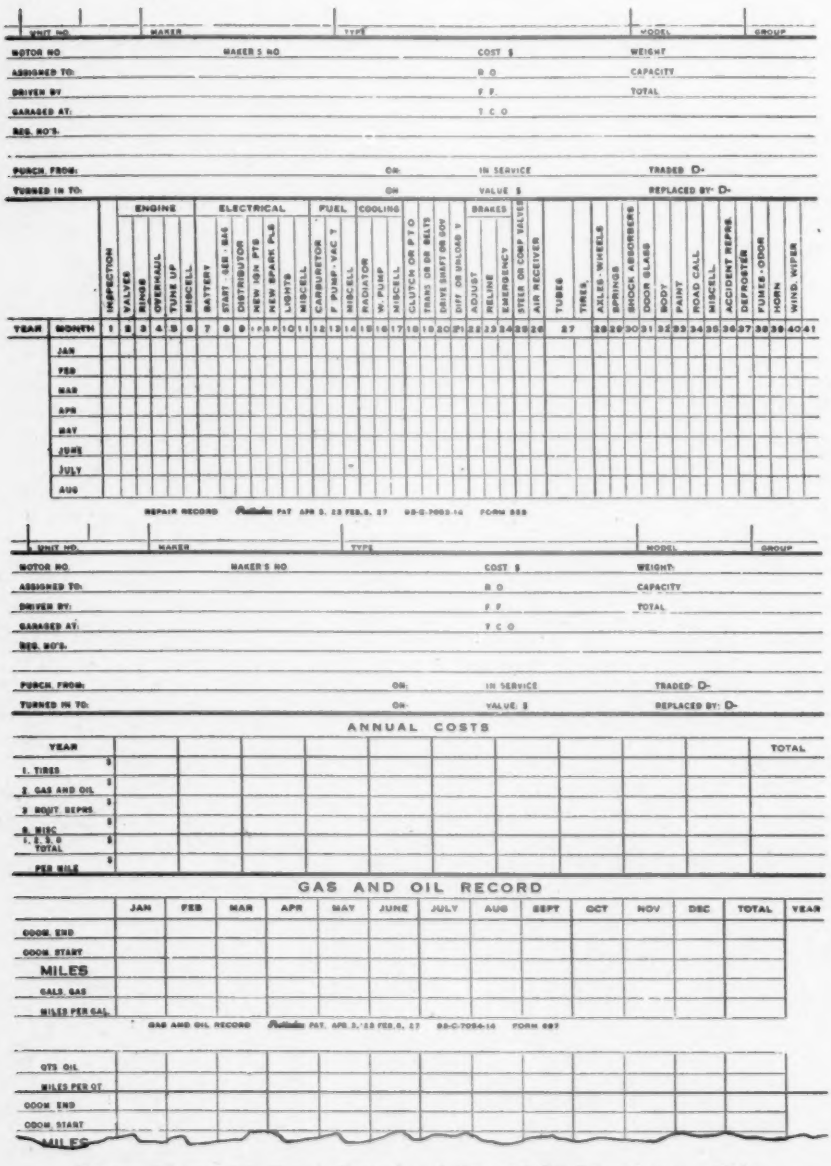
Some drivers are not impressed with the importance of careful driving until they are shown how it affects them in driving their personal cars. One striking way of doing this is to use the gasoline mileage bottle test with the driver accelerating in various ways. This gives him a quick realistic view of what happens when he "steps on it" and how by reasonable use of the throttle he may save gasoline.

The following data are taken from Chrysler's "How to Get More Miles per gallon from your Automobile" (Fig. 20, 21, 22, 23).

Drivers' Responsibilities for Tires

1. See that inflation is o.k. before leaving garage.
2. See that there is a valve cap on each valve.
3. Start smoothly and slowly, take curves slowly.
4. Drive at an even reasonable rate.
5. Stop smoothly and gradually.
6. Avoid hitting holes in road, rocks, curbs, glass and any object that would damage the tire.
7. Use care not to scrape sidewalls of tires against curb when parking.
8. Do not overload, keep loads centered in truck.
9. Be alert to notice hard steering or unusual swaying of vehicle as you drive, because it may mean a soft tire.
10. Do not drive on an under inflated tire or it will be ruined.
11. If you have to change a tire on the road be sure to make up all the wheel nuts evenly. When you return to the garage report the change so that the punctured tube may be repaired.
12. Plan your driving to eliminate unnecessary miles.

The accompanying illustrations were taken from Chevrolet Service Topics: (Figs. 24, 25, 26, 27.)



Figures 18 and 19. Repair Record and Gas and Oil Record are on light cardboard. 8" x 10" printed both sides. Forms are Postindex Patent.

Speed M.P.H.	*H. Power Used*
80	48
60	20
40	6
20	0.8

Figure 20. Table illustrates the amount of horsepower used in overcoming the wind resistance at various car speeds. Averaged for several popular makes of cars.

Constant Speed M.P.H.	*Loss in Distance*
20	..
30	..
40	..
50	23%
60	33
70	43.8
80	57.5

Figure 21. Based on 30 MPH = 100%, shows the relative distances a gallon of fuel will take you at various constant speeds. It illustrates the great waste of excessive speed. Averaged for several popular makes of automobiles.

Low gear uses up Gasoline 130% faster than high at 20 M.P.H.

Second uses up Gasoline 50% faster than high at 30 M.P.H.

Fig. 22—Above facts show why speeding up in low or second—or staying in these gears too long—reduces the miles per gal. average

Car A.—Constant speed 25 M.P.H. = 100%
Car B.—Average speed 24.4 M.P.H.—Accelerate 15 to 30—coast in gear to 15—repeat cycle..... 34% loss
Car C.—Average speed 25.7 M.P.H. Accelerate 15 to 30—brake down to 15, repeat cycle.....57% loss
Car D.—Average speed 22 M.P.H.—Accelerate through gears to 38 M.P.H. —shift at 15 and 25—brake down to stop—repeat cycle 71% loss

Fig. 23. Above table shows the effects of various types of driving on fuel economy. It is based on road tests by automotive engineers and is an average of results obtained in several popular makes of cars.

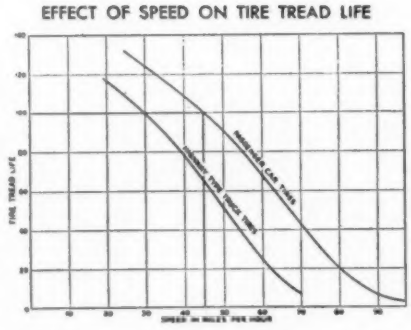
Mileage Reduction

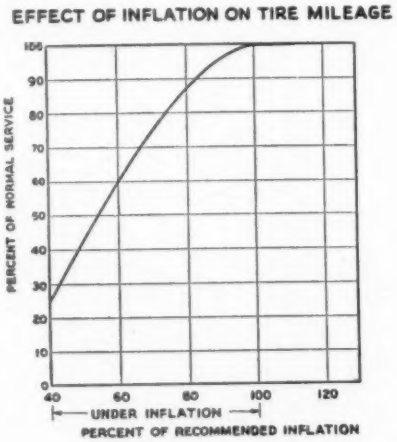
The following memorandum was issued by T. F. Smith, Vice-President in charge of Distribution on March 30, 1942:

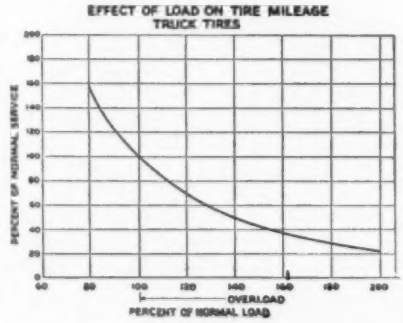
Distribution Department

"In an effort to reduce transportation mileage, thereby reducing gasoline consumption and conserving tires, the following measures have been taken.

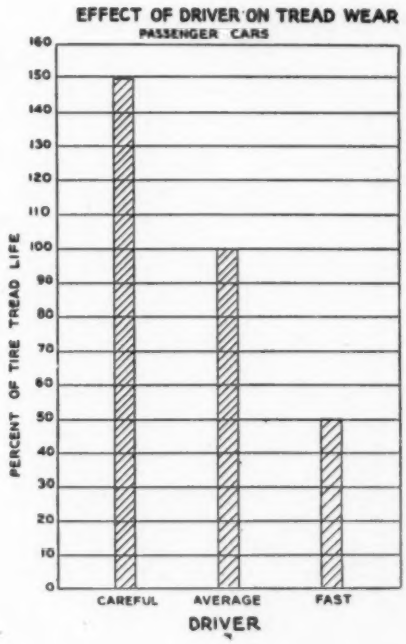
1. A meeting was held with the superintendents of the divisions. At this meeting it was pointed out that all uses of company cars for other than company business must be eliminated.
2. Closer Supervision of the dispatching of work and men in the Street and Customer's Service Divisions.
3. Dispatching of orders at noon by telephone to the men in the district rather than having them report to the stations.







Figures 24, 25, 26 and 27.



4. Elimination of calls on closed orders until definite arrangements have been made with the customer by telephone.
5. Instructions given to the Premise Record Clerks to secure complete information on all orders and to advise the customer to have someone on the premises at the time the service man will arrive.
6. Arrangements made in cooperation with the Sales Department for weekly schedule deliveries and pick-ups.

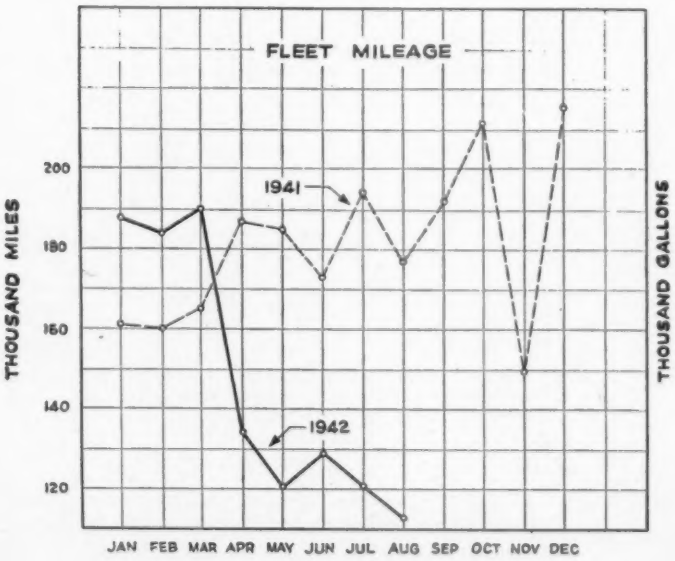


Figure 28.

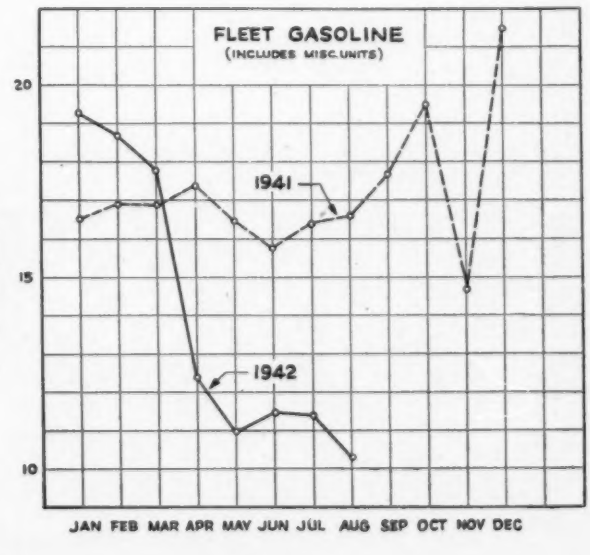


Figure 29.

7. Carrying of a small stock of pipe and fittings (under $50.) on our street trucks and compressors.
8. Maintain a supply of street stock at the Brackett St. Station, approximately $800.00.
9. Transportation of street gangs only where local transportation is not available. This applies only at the beginning and close of working days.
10. Discontinue the use of car for messenger work between McBride St. and 100 Arlington St. Local transportation to be used.
11. Discontinue the garaging of six customer's service cars at the employees' homes.
12. There are 12 cars assigned to division heads, assistants, and district foremen that are garaged at their homes where they are available for emergency calls. If an equal number of cars could be put out of service these cars could be used for the daily operations and the cars garaged at home could be left there for emergency use.

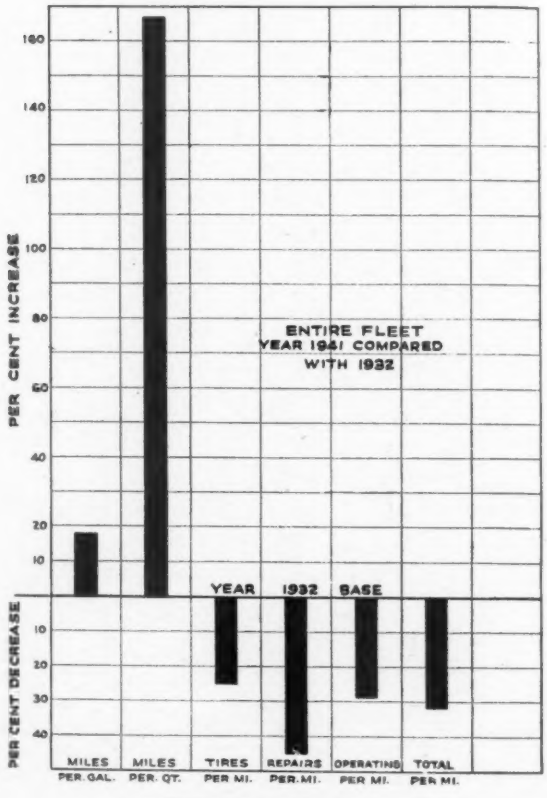
These plans were carried out and later the use of the passenger cars by Collection and Meter Reading Department and Investigation Department was discontinued.

Figure 30.

The results of this action are shown in Fig. 28 which gives a comparison of 1941 and 1942 fleet mileage by months. Fig. 29 compares gasoline consumption.

Fig. 30 shows a comparison between the year 1932 and 1941.

This improvement has been made possible by the wholehearted cooperation of all department and division heads, all foremen, dispatchers, drivers, mechanics, garagemen, and others whose duties brought them in contact with our transportation equipment.



Presented at a meeting of The New England Gas Association Operating Division, Boston, Mass., October 7, 1942.

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The Informal Fuel Committee of the New England Gas Companies

A Cooperative Regional Group Set Up and Actively Functioning in the Interest of Our War Effort to Protect Gas Service, which is Officially Recognized as Vital to Civilian Morale and to Industrial Production

IT HAS LONG been recognized that New England, with its many highly industrialized communities, is connected with other parts of the country by rail transportation systems which operate through gateways of somewhat restricted capacity. Water transportation has been largely depended on in the past, particularly for handling bulk commodities such as fuel and oil, both of which are essential to gas company operation. Prior to the war, nearly three-quarters of the coal and almost all of the oil was brought to New England by water.

The war brought about an abrupt curtailment of water transportation. The shift to rail, truck and pipe-line presented grave problems of fuel supply to the entire East, and particularly to New England. In spite of the magnificent job done by the railroads, these problems are still far from solved.

Recognizing at an early date that the sinking and requisitioning of tankers must inevitably lead to a shortage of oil for gas making in New England, Charles G. Young, as President of The New England Gas Association, called a special meeting of water gas operators in Boston on February 27th, 1942. Current oil and other fuel supply problems were discussed at length and it was decided to set up an informal committee to function independently of the Association and with representatives in each New England state.

It was indicated that it would be desirable for the Committee to interest itself in *all* phases of the fuel question, although the foregoing meeting was called primarily to consider the pressing question of gas oil supplies. Thus the main objectives were to be:

"(1) To take necessary steps to obtain adequate supplies of fuels of a proper quality to insure uninterrupted service for the customers of New England gas companies.

"(2) To point out to appropriate sources the harmful effects of any further increase in fuel costs of whatever nature.

"(3) To cooperate with interested agencies to build up gas company fuel supplies during the approaching summer months."

Accordingly the "Informal Fuel Committee of the New England Gas Companies" was formed with the above objectives and with the following personnel:

Chairman: Hall M. Henry, Negea Service Corporation, 719 Massachusetts Avenue, Cambridge, Mass.

Connecticut—*Paul R. Buchanan, Vice Pres., The Hartford Gas Co., Hartford, Conn. W. T. Jebb, Manager, The Connecticut Light & Power Co., Waterbury, Conn.

Massachusetts—*Frank S. Clifford, Vice Pres., Springfield Gas Light Co., 89 Broad Street, Boston.
P. J. Rempe, Vice Pres., Stone and Webster Service Corp., 49 Federal Street Boston.
D. S. Reynolds, Vice Pres., Boston Consolidated Gas Co., 100 Arlington Street, Boston.
R. E. Shillady, General Purchasing Agent, New England Power Service Company, 441 Stuart Street, Boston.
Charles G. Young, Manager, Springfield Gas Light Company (Treasurer of Committee).

Maine—*G. Warren Stiles, Vice Pres. & Gen. Mgr., Portland Gas Light Co., Portland.

New Hampshire—*E. L. Hall, Treas. & Mgr., Manchester Gas Co., Manchester.

Rhode Island—*J. A. Weiser, Pres. & Gen. Mgr., The Newport Gas Light Co., Newport.

Vermont—*A. A. Cree, Pres., Twin State Gas & Elec. Co., Rutland.

The first work of the Committee was the preparation of a comprehensive questionnaire to show the fuel and oil requirements of each plant by months, available storage facilities, unloading facilities, etc. The fact that a return was received from every gas company in New England indicates the interest taken and the cooperation given.

Contact was made with the various national, regional and state governmental bodies and committees dealing with fuel problems in New England—especially oil problems. The results of the questionnaire were made available to them; and the essential role of the gas industry in the war effort as well as problems of gas production and of fuel and oil transportation were freely discussed. This was helpful to all concerned, especially as many of the representatives contacted did not have a complete picture of all of the essential technical factors involved.

At an important meeting of the Committee on April 22nd, attended by 50 persons, the Chairman reported that "the fuel situation involving *both* coal and oil is critical," that not only might quantities be inadequate but quality might be poor, that non-essential use of gas and other fuels might have to be curtailed, and that the needs and essential place of the gas industry appeared to be fairly well recognized. He then presented the following program of suggested future activities for the Committee:

(A) Set up a program to bring about a more efficient use of gas. In view of the seriousness of the fuel situation, the gas industry should make every effort to eliminate the waste of gas. A program on consumer education in the economical use of gas could be undertaken; heating customers could be encouraged to install storm windows

* *State Chairmen*

and insulation, all customers urged to keep appliances properly adjusted, etc.

(B) A suitable Manufactured Gas Limitation Order should be considered.

A limitation order along the lines of the order for Natural and Mixed Natural and Manufactured Gas may be necessary from a fuel conservation angle. Further, with a possible shortage of coal and oil for customers who use these fuels for heating and the *great possibility that gas customers may make use of their gas equipment to make up for any deficiency in their heating,* thereby creating an unusual demand on gas plants already loaded or nearing an overloaded condition, it would seem the gas industry is vitally interested in some form of a limitation order.

(C)Technical Facts on the following should be prepared.

(1) Effect of reducing B.t.u. standards on quantities of coal, coke and oil, and effect on plant and distribution capacities.

(2) The relative quantities of fuels needed by the New England gas companies under the following conditions:

Light Gas Oil and Coke
Heavy Oil and Coke

(3)Oil Storage Facilities

Factual data should be prepared on number of months' storage of oil possible under following conditions:

Use of Light Oil for gas making
Use of Heavy Oil for gas making

(4) We should set forth the relative quantities of fuels required to produce gas for different heating operations, say, for instance, home heating vs. the quantity of oil or coal needed for heating the same size of home. Such information will prove valuable in the event orders for switching from gas to other fuels are proposed. Each company will have to prepare its own comparisons, due to the different types of fuels used and equipment in use by gas companies.

(5) The effect on gas making capacities when fuels other than those now in use are substituted.

(a) Coal for Coke.
(b) High Sulphur oil for low Sulphur.

(6) The effect of a change in gravity of gas on use by the customer and on distribution capacities.

(D) Should the New England Gas companies set up at this time a workable program for pooling of oil, coal and coke supplies?

All of these points were thoroughly discussed, the program was unanimously adopted and five sub-committees were appointed by the Chairman to carry out its various important parts.

The work of these sub-committees to date has been as follows:

1. Program for the Conservation of Gas.

(Chairman—E. G. Twohey, Vice Pres. and Manager, Northampton Gas Light Company) A report made by this Sub-committee is published herewith.

Thereafter, the firm of Wortman, Barton and Goold of New York, in cooperation with Messrs. Rutherford, Henry, Young and Wright, incorporated the general ideas of this Sub-committee in a series of advertisements and direct mail pieces for the use of the New England Gas and Electric Association group of companies and the Springfield Gas Light Company. Before the entire series was completed it was learned through the American Gas Association that the War Production Board was desirous of having the gas utility companies undertake a gas conservation program, irrespective of their ability to handle their probable loads. This series of advertisements and direct mail pieces was then presented to the War Production Board to see if it represented the type of program it had in mind. The series was critically examined by the War Production Board and approved with minor revisions. The whole project has since been taken over by the American Gas Association for general transmission to the industry nationally.

2. Prepare a Suitable Manufactured Gas Limitation Order.

(Chairman—E. H. Eacker, Vice President, Boston Consolidated Gas Company)

A suggested form of order was prepared by this Sub-committee after extended consideration. This was submitted to the American Gas Association, approved by its Executive Board and sent out to the industry. Thereafter, it was presented to the War Production Board.

Members of the Informal Fuel Committee sat in with other A.G.A. representatives on discussions of a suitable Manufactured Gas Limitation Order with W.P.B. representatives.

3. Presentation of Technical Facts.

(Chairman—W. C. Slade, Gas Engineer, New England Power Service Co.)

This Sub-committee has been studying (a) the possible advantage of reducing gas heating value standards, (b) use of oils with higher sulphur content, (c) use of light gas oil in place of heavy oil, and (d) substitution of coal for coke as water gas generator fuel.

Its work thus far indicates that in most situations there would be little if any advantage or saving in materials by reducing the heating value of the gas.

4. Set Forth Relative Quantities of Fuels Required for Various Heating Operations.

(Chairman—Edwin H. Hall, Treasurer and Manager, Manchester Gas Co.)

A comprehensive report made by this sub-committee is published herewith.

It indicates clearly that it would be to the interest of the war effort as well as of the consumers if gas were used in each company's territory to the extent of its full capacity, standby fuels being employed to bring about, as nearly as practicable, a 100 per cent load factor on the gas company system.

5. Pooling Storage Facilities.

(Chairman—Charles G. Young, Manager, Springfield Gas Light Co.)

The efforts of this important Sub-committee have been directed toward the securing by December 1st of a four months' stock of gas oil in the tanks of New England gas companies to carry them over the winter period of high demand for gas and possibly of impaired transportation.

Plans have been worked out for the pooling of gas company oil storage facilities, and contacts have been made with various governmental authorities to impress on them the vital importance of uninterrupted gas supply to the war effort. There is recent evidence that this is beginning to be appreciated more widely than was earlier the case.

W.P.B. now is considering the desirability of authorizing New England gas companies to use light gas oil rather than heavy oil for water gas enrichment. The effects of such a change are now being studied by the Informal Fuel Committee so that W.P.B. will have available these data before issuing a directive on this subject.

The Committee also now has before W.P.B. the question of oil rationing as it relates to the gas companies. There are a number of important angles for consideration in connection with such a procedure as it is now proposed.

With respect to the future, the activities of the Informal Fuel Committee of the New England Gas Companies will be adapted to the changes which take place in its special field of war activity. Thus far it has been a leader in this field which is so essential to the general war effort. Its work should gain rather than decrease in importance as the war program becomes more comprehensive.

Conservation of Gas Through Consumer Education

Report of Sub-Committee of the Informal Fuel Committee of the New England Gas Companies

By
E. G. Twohey, Chairman

AT A MEETING held in Boston April 22, 1942, sponsored by the Informal Fuel Committee of the New England gas companies, and attended by Managers representing approximately 80% of the meters, the following resolution was passed:

"RESOLVED that it be recommended to all New England gas companies that they individually undertake a campaign of consumer education designed to bring about conservation in the use of gas."

The sub-committee assigned to submit suggestions on this subject urges the immediate inauguration of a gas conservation campaign by all gas companies for the following reasons:

1. As a contribution of the gas industry towards the national war effort, through the conservation of vital fuels used in the manufacture of gas.

It has been estimated roughly that, for every 1200 cu. ft. per year (or 100 cu. ft. per month) reduction in the domestic use of gas by all customers in New England, the transportation of approximately 800 carloads per year of solid and liquid fuels into New England is saved.

2. As an aid to our customers in meeting increased costs of living.

3. Incidentally it presents an opportunity for every gas company to create customer good-will. For instance, any industry today which urges a reduction in the use of its products in order to further the national war effort should meet an understanding and a receptive public opinion.

Assurance Regarding Normal Customer Needs

All educational material directed at customers should stress the fact (where such is the case) that no shortage of gas manufacturing facilities is involved in this conservation program. Customers will want to know that manufacturing facilities are adequate to meet their normal needs. (Where this assurance cannot be given then a company will apply under a Manufacturing Gas Limitation Order, when issued, for whatever action it will need to meet present users normal demands.) The purpose of conserving gas should be clearly stated as being to conserve vital fuels needed for war purposes, and to help relieve the strain on transportation facilities used to convey these fuels into New England.

Promotional Methods

1. Newspaper advertisements, pamphlets, bill stuffers, radio, billboards, store posters, envelope imprints, messages on back of bills, etc.

Attention is directed to the Home Volunteer Program recently issued by Servel, Incorporated, as an example of the type of promotion recommended.

2. Home service departments—stress conservation of gas in cooking schools and in house - to - house contacts.

3. Industrial and commercial customers could be contacted individually by company sales and service representatives.

Suggested Methods of Saving Gas

The committee submits herewith a partial list of methods by which the average householder may eliminate waste and obtain more economical use of gas. Your own advertising and home service departments can undoubtedly add substantially to this list.

Cooking—
Top Stove Cookery

Turn burners as low as possible after boiling point has been reached.

Cook more one-dish meals.

Cook two vegetables in the same kettle.

Use small quantities of water to cook vegetables; use less gas and save vital vitamins and minerals.

Do not cook vegetables too long.

Use proper size and type of cooking vessel—do not let flame extend over the sides and top of vessels.

Be sure burners are kept clean.

Oven Cookery

Cook more oven meals.

Fill oven to capacity—use all available space. When several articles are baked at once, stagger the tins so that oven heat may circulate freely. This speeds baking time and reduces the consumption of gas.

Do more baking at one time—once oven is heated up, try to do entire day's baking, rather than heat oven up several times per day.

Use the oven heat control.

Shut off oven at least five minutes before cooking time has elapsed.

Oven peeking is wasteful of fuel and is unnecessary with a modern gas range.

Broiling

It is cheaper, as well as healthier, to broil rather than fry foods.

Whole meals of meat, pre-cooked vegetables and fruit may be broiled together to save fuel.

The broiler makes a large amount of superior toast in a short time and with less use of gas.

Refrigeration

Do not overcrowd the refrigerator.

Place the food on the shelves so that there is room for air to circulate around them.

Do not waste space or refrigeration by keeping foods in the refrigerator that do not need to be kept cold to preserve them, such as pickles, jelly or vegetable shortening.

Put food in as small containers as possible.

Cool cooked foods thoroughly before placing in refrigerator.

Remember to reset the temperature control to normal after you have done quick freezing.

Remove such waste, as badly wilted leaves and carrot tops before placing vegetables in vegetable crisper or airtight bags.

Return ice cube trays to freezing compartment immediately after removing ice cubes (refilling the empty trays with water at once).

Do not leave refrigerator door open.

Do not have refrigerator placed too close to radiator, or other heat source—allow 6 inches head space.

Water Heating

With non-automatic heaters, do not heat more water than is required.

Insulation on water tanks will save gas.

Do not let hot water run.

Repair leaky faucets.

Insulate hot water pipes.

Place water heater at closest location to the maximum use, which is in most cases the kitchen.

Heating

Carry lower temperature in house.

Install home insulation.

Install storm windows and doors.

Close radiators and rooms not being used.

Turn thermostat down at night.

Check location of thermostat.

Close bedroom doors at night so that the whole house will not cool off.

Appliance Servicing

One of the fundamental requirements for the efficient use of gas appliances is, of course, their proper adjustment.

Many companies have sales supervisors, servicemen, home service workers and other valuable employees whose regular work has been modified by War conditions.

It is suggested that these employees might be given training in the adjustment of appliances (using the New England Gas Association appliance servicing manual) and sent out to contact all customers and perform the simpler appliance adjustments. More of the customer good-will mentioned above would result.

Since these people could operate on foot, a reduction in regular service calls and a consequent saving in trucks, tires and gasoline should also result.

Appliance surveys could be combined with these voluntary service visits, thus accumulating valuable market information in preparation for the time when active merchandising is resumed.

"Ten Point Check" for Ranges

We reproduce herewith as a suggestion a ten point service checkup for gas ranges, which is now in use in one company in New England:

1. Top Burners, Grids, etc.
   Clean burners, venturis, grids, manifolds, etc.
2. Oven Burners—Racks—Pans.
   Clean oven burners, adjust racks, guides, etc.
3. Broiler.
   Clean and regulate broiler burner.
4. Oven Heat Control.
   Check oven heat control at high and low temperature, check by-pass.
5. Pilots. Clean pilot tips, tubes and covers.
6. Outside of Range.
   Clean and polish.
7. Door Springs and Catches.
   Adjust tension on springs and adjust catches.
8. Burner Cocks.
   Remove and clean burner cocks, caps and orifices.
9. Flue Passages.
   Clean all accessible flue passages.
10. New Parts.
    Recommend where needed.

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Weighted Illuminating
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The C-F regulator here illustrated may be used as reducing regulator, relief valve, or zero governor. It is designed for sensitive and sure operation governing the flow of low pressure gas to industrial burners, heat-treating furnaces, atmosphere controllers, inert gas generators, etc. Is an excellent district governor. Gives precise regulation of extremely low pressures at slight differential. Maximum inlet pressure 40 pounds, outlet range from atmosphere to 5 pounds. Sizes 1" to 2" screwed; 2" to 12" flanged. C-F Regulators cover all needs of pressure control as applied to gas, air, oil, water, steam. Write for more specific data.
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38 PENN AVE. PITTSBURGH, PA.

Relative Fuel Equivalents For Individual Heating Purposes and Relative Ton Mile Haulage Requirements

Report of Sub-committee of the Informal Fuel Committee of the New England Gas Companies

By
Edwin H. Hall, Chairman

IN ORDER to determine the relative ton miles of transportation involved in substituting some other fuel for gas the attached data and study was compiled, the purpose being to see wherein it would be possible and feasible to recommend substituting some other fuel for gas thereby relieving the fuel transportation burden. The figures used were obtained from United States Government sources where available and where not from recognized authorities.

In a consideration of the fuel problem there were three factors analyzed.

A. Transportation involving fuel equivalent and ton miles.
B. Fuel storage facilities.
C. Physical limitations of fuel using equipment.

The conclusions can be briefly summarized as follows:

A. *Transportation:*

(1) Taking the New England gas industry as a unit together with the over-all uses of gas there would be no saving in transportation by substituting either oil or coal for gas

(2) Taking individual heating operations there would be some instances where a saving in transportation would result from changing from gas to coal.

(3) Again taking individual heating operations there would be some instances where a saving in transportation would result from changing from coal or oil equipment to gas.

B. *Fuel Storage Facilities:*

(1) A study of oil* storage facilities of the New England gas companies indicates they can store 4 to 6 months winter use of oil.

* Light Gas Oil, Residuum, and Bunker "C" oils, used for gas enrichment purposes, is here referred to.

(2) The coal and coke storage is practically unlimited.

C. *Physical Limitation of Equipment:*

(1) There are certain physical limitations which might retard if not altogether prohibit changing from gas to some other fuel.

(2) There are very few physical limitations in converting from coal or oil to gas.

(3) There are limitations on obtaining equipment to convert or substitute fuels which applies to all fuels alike.

Basic Data
Relative Equivalents for Coal, Oil and Gas

1. For Househeating.
   1 M.C.F. Gas = 5 Gal. (No. 2 or 3) Oil = 66.6 lbs. Coal.
   Authority—M.I.T. Professor who is also an officer of the American Heating and Ventilating Society (name withheld by request).
2. For Kitchen Heating.
   1 M.C.F. Gas = 6 Gal. (No. 1) Oil = 68.0 lbs. Coal.
   Authority—Same as No. 1.
3. For Domestic Cooking.
   1 M.C.F. Gas = 4.89 Gal. (No. 1) Oil = 271.8 lbs. Coal.
   Authority—United States Housing Authorities, Bulletin No. 19 .
4. For Water Heating.
   1 M.C.F. Gas = 6 Gal. (No. 2 or 3) Oil = 97.4 lbs. Coal.*
   Authority—M.I.T. tests by Professor G. B. Wilkes.
   (*Coal boiler used for heating with Indirect Water Heater.)
   (Where coal is used in a pot stove this figure is 150 lbs. equal to 1 M.C.F.)
5. Commercial Cooking.
   1 M.C.F. Gas = 10 Gal. (No. 2 or 3) Oil = 100 lbs. Coal.
   Authority — Standard Gas Equipment Corporation.

COAL GAS

148 lbs. Coal	148.0
.82 Gal. Tar at 9.9 lbs.	—8.1 x
Net after Tar credit	139.9
Lbs. Coke and Breeze salable	82.1
Net after Coke credit	57.8
Boiler Fuel lbs. per M.C.F. for auxiliaries	4.5
	62.3

Assumed 56% coke yield based on coal used.

Assumed 14% breeze yield based on coal used.

Assumed 11 Gal. Tar per ton of coal used.

x *Tar has been deducted since the tar thus produced is used for Fuel or road material that would otherwise require transportation facilities.*

BASIC CONSTANTS USED

530 B.T.U. per Cubic Foot of Gas

Average weight No. 1 Oil	6.93 lbs. per gallon
Average weight No. 2 or 3 Oil	7.35 lbs. per gallon
Average weight Bunker C Oil	7.9 lbs. per gallon

Average domestic	customer use	14.4 M.C.F. per year
Average househeating	customer use	200.0 M.C.F. per year
Average kitchen heating	customer use	60.0 M.C.F. per year
Average Auto. Water Heating	customer use	36.0 M.C.F. per year
Average Tank Water Heating	customer use	12.0 M.C.F. per year
Average Refrigeration	customer use	22.0 M.C.F. per year
Miscellaneous Heating	customer use	1.6 M.C.F. per year
Commercial Cooking	customer use	270.0 M.C.F. per year
Commercial General	customer use	46.0 M.C.F. per year
Industrial (Heat Treating)	customer use	1310.0 M.C.F. per year
Industrial (Drying, Melting, etc.)	customer use	1080.0 M.C.F. per year

COMPARISON OF AVERAGE INDIVIDUAL CUSTOMER USES - GAS, OIL, AND COAL

FUEL REQUIREMENTS NEEDED TO PERFORM CERTAIN SPECIFIC TYPES OF HEATING OPERATIONS TRANSLATED IN TONS

	GAS CUSTOMERS							OIL CUSTOMERS	COAL CUSTOMERS	
	MADE FROM HEAVY OIL			MADE FROM LIGHT OIL			COKE OVEN			
	Tons Oil	Tons Coal or Coke	Total Tons	Tons Oil	Tons Coal or Coke	Total Tons	Tons Coal	Tons Oil	Tons Coal	
Domestic Cooking	.1565	.1505	.3070	.1189	.2505	.3694	.4486	.2439	2.4000	
House Heating	2.1740	2.0900	4.2640	1.6530	3.4800	5.1320	6.2300	3.6750	6.6777	
Kitchen Heating	.6522	.6270	1.2792	.4956	1.0440	1.5396	1.8690	1.2974	2.0400	
Auto. Water Heating	.3913	.3762	.7675	.2973	.6264	.9237	1.1214	.7484	1.7530	(Hot water from heating plant)
									2.7000	(Hot water from pot stove)
Tank Water Heating	.1304	.1254	.2558	.0991	.2088	.3079	.3738	.2495	.5843	(Hot water from heating plant)
									.9000	(Hot water from pot stove)
Refrigeration	.2391	.2299	.4690	.1817	.3828	.5645	.6853	.4158	None	
Miscellaneous (Mostly Heating)	.0174	.0167	.0341	.0140	.0278	.0418	.0498	.0294	.0536	
Commercial Cooking	2.9363	2.8215	5.7578	2.2302	4.6980	6.9282	8.4105	9.9225	13.5000	
Commercial General	.5003	.4807	.9810	.3300	.8004	1.1304	1.4329	1.0143	2.2400	
Industrial (Heat Treating)	14.2463	13.6895	27.9358	10.8206	22.7940	33.6146	40.8065	28.8855	44.5400	
Industrial Miscellaneous	11.7450	11.2860	23.0310	8.9208	18.7920	27.7128	33.6420	23.6640	36.7200	

COMPARISON OF TON MILES OF AVERAGE INDIVIDUAL CUSTOMER USES - GAS, OIL, AND COAL

TON MILE HAULAGE REQUIRED TO PERFORM CERTAIN SPECIFIC TYPES OF HEATING OPERATIONS

	GAS CUSTOMERS							OIL CUSTOMERS	COAL CUSTOMERS	
	MADE FROM HEAVY OIL			MADE FROM LIGHT OIL			COKE OVEN			
	Ton Miles Oil	Ton Miles Coal	Total Ton Mile	Ton Miles Oil	Ton Miles Coal	Total Ton Mile	Ton Miles	Ton Miles	Ton Miles	
Domestic	313.00	67.68	380.68	237.80	112.73	350.53	201.87	487.80	1 080.00	
House Heating	4 348.00	940.50	5 288.50	3 304.00	1 566.00	4 870.00	2 803.50	7 350.00	3 004.97	
Kitchen Htg.	1 304.40	282.15	1 586.45	991.20	469.80	1 461.00	841.05	2 594.80	918.00	
Auto. Water Heating	782.60	169.29	951.89	594.60	281.88	876.48	504.63	1 496.80	788.85	(Hot water from heating plant)
									1 215.00	(Hot water from pot stove)
Tank Water Heater	260.80	56.43	317.23	198.20	93.96	292.16	168.21	499.00	262.94	(Hot water from heating plant)
									405.00	(Hot water from pot stove)
Refrigeration	478.20	103.46	581.66	363.40	172.26	535.66	308.39	831.60	None	
Miscellaneous	34.80	7.52	42.32	26.00	12.51	40.51	22.41	58.80	24.12	
Commercial Cooking	5 872.60	1 269.67	7 142.27	4 460.40	2 269.10	6 729.50	3 784.73	19 845.00	6 075.00	
Commercial General	1 000.60	216.32	1 216.92	760.00	360.18	1 120.18	644.81	2 028.60	1 008.00	
Industiral (Heat Treating)	28 492.60	6 160.28	34 652.88	21 641.20	10 257.30	31 898.50	18 362.93	57 771.00	20 043.00	
Industrial Miscellaneous	23 490.00	5 078.70	28 568.70	17 841.60	8 456.40	26 298.00	15 138.90	47 328.00	16 524.00	

Based on the assumption that all coal comes from Pennsylvania or a distance of approximately 450 miles and all oil comes from Texas a distance of approximately 2,000 miles.

COMPARISON OF TON MILES OF AVERAGE INDIVIDUAL CUSTOMER USES - GAS, OIL, AND COAL

TON MILE HAULAGE REQUIRED TO PERFORM CERTAIN SPECIFIC TYPES OF HEATING OPERATIONS

	GAS CUSTOMERS							OIL CUSTOMERS	COAL CUSTOMERS	
	MADE FROM HEAVY OIL			MADE FROM LIGHT OIL			COKE OVEN			
	Ton Miles Oil	Ton Miles Coal	Total Ton Miles	Ton Miles Oil	Ton Miles Coal	Total Ton Miles	Ton Miles	Ton Miles	Ton Miles	
Domestic	313.00	135.36	448.36	237.80	225.46	463.26	403.74	487.80	2 160.00	
House Heating	4 348.00	1 881.00	6 229.00	3 304.00	3 132.00	6 436.00	5 607.00	7 350.00	6 009.94	
Kitchen Heating	1 304.40	564.30	1 868.70	991.20	939.60	1 930.80	1 682.10	2 594.80	1 836.00	
Auto. Water Htg.	782.60	338.58	1 121.18	594.60	563.76	1 158.36	1 009.26	1 496.80	1 577.70	(Hot water from heating plant)
									2,430.00	(Hot water from pot stove)
Tank Water Htg.	260.80	112.86	373.66	198.20	187.92	386.12	336.42	499.00	525.88	(Hot water from heating plant)
									810.00	(Hot water from pot stove)
Refrigeration	478.20	206.92	685.12	363.40	344.52	707.92	616.78	831.60	None	
Miscellaneous	34.80	15.04	49.84	26.00	25.02	53.02	44.82	58.80	48.24	
Commercial Cooking	5 872.60	2 539.35	8 411.95	4 460.40	4 536.80	8 998.60	7 569.45	19 845.00	12 150.00	
Commercial General	1 000.60	432.63	1 433.23	760.00	720.36	1 480.36	1 289.61	2 028.60	2 016.00	
Industrial Heating	28 492.60	12 320.55	40 813.15	21 641.20	20 514.60	42 155.80	36 725.85	57 771.00	40 086.00	
Industrial Miscellaneous	23 490.00	10 157.40	33 647.40	17 841.60	16 912.80	34 754.40	30 277.80	47 328.00	33 048.00	

Based on the assumption that all coal comes from West Virginia or a distance of approximately 900 miles, and all oil comes from Texas or an approximate distance of 2,000 miles.

YEARLY FUEL REQUIREMENTS
USED IN DELIVERING RELATIVE QUANTITIES OF FUELS NEEDED
TO PERFORM CERTAIN SPECIFIC TYPES OF HEATING OPERATIONS

Use	Equivalent Fuel Required per Year		
	Gas	Oil	Coal
Domestic Cooking	14.4 M.C.F.	70.4 Gal.	2.4 tons
Househeating	200 M.C.F.	1000 Gal.	6.7 tons
Kitchen Heating	60 M.C.F.	360 Gal.	2.04 tons(1)
Automatic Water Heating	36 M.C.F.	216 Gal.	1.75 tons
Tank Water Heater	12 M.C.F.	72 Gal.	.58 tons
Refrigerator	22 M.C.F.	120 Gal.	*None
Misc. - Mostly Heating	1.6 M.C.F.	8 Gal.	.0536 tons
Commercial Cooking	270 M.C.F.	2700 Gal.	13.5 tons
Commercial General	46 M.C.F.	276 Gal.	2.24 tons
Industrial (Heat Treating)	1310 M.C.F.	** 7860 Gal.	**44.54 tons
Industrial (Miscellaneous)	1080 M.C.F.	6480 Gal.	36.72 tons

(1) The gas companies have found by experience this figure to be 2.40.
* Impossible to convert to coal.
** Impracticable to convert to oil or coal.

STATISTICAL DATA

Classification	No. Users	Unit Cons./Yr.		Total Gas Used per Year
Cooking Customers	1 256 629 x	14.4		18 095 500 MCF
House Heating (Exclus. Water Htg. and Cooking)	26 555 x	200		5 311 000 MCF
Kitchen Heating (Exclus. Water Htg. and Cooking)	6 150 x	60		369 000 MCF
Auto. Water Heater Users	86 000 x	36		3 096 000 MCF
Tank Heater Users	330 000 x	12		3 960 000 MCF
Refrigerators	75 000 x	22		1 650 000 MCF
Miscellaneous Heating	131 400 x	1.6		210 260 MCF
Commercial Cooking	13 536 x	270	3 666 250 MCF	
Commercial General	47 558 x	46	2 199 750 MCF	
Industrial (Heat Treating)	6 116 x	1 310	8 065 753 MCF	
Industrial (Melting, Drying, etc.)	679 x	1 080	733 250 MCF	
		(y)	14 665 003 MCF	14 665 003 MCF
	Grand Total			47 356 763 MCF

(y) This is the total M.C.F. figure shown for 1941 Industrial and Commercial Usage by American Gas Association. In order to break down this figure into the four district classifications used, three of the larger companies, representing 35% of the total Massachusetts sendout, were used.

APPROXIMATE MILEAGE TO DELIVER FUELS TO NEW ENGLAND

Estimated coal or coke (to make gas) mileage	450 Miles (Penn. to N.E.)
Estimated oil (to make gas) mileage	2000 Miles (Texas to N.E.)
Estimated customer coal mileage	450 Miles (Penn. to N.E.)
Estimated customer No. 1 Oil mileage	2000 Miles (Texas to N.E.)
Estimated customer No. 2 or 3 Oil mileage	2000 Miles (Texas to N.E.)

FUEL REQUIREMENTS TO MAKE 1 M.C.F. OF GAS WATER GAS MADE WITH HEAVY OIL

4.23 Gal. at 7.9 lbs. per gallon	33.42 lbs.
*Less 1.18 Gal. Tar at 9.9 lbs. per gallon	—11.68 lbs. x
Net 3.05 Gal. or	21.74 lbs.
Plus 16.4 lbs. Coke (or Anthracite)	16.40 lbs.
Boiler Fuel lbs. per M.C.F. for auxiliaries	4.50 lbs.
Total lbs. required to make 1 M.C.F. Gas	42.64 lbs.

* *Assumed 28% Tar yield based on oil used per M.C.F.*
The above figures are the weighted averages for companies in the New England States using heavy oil only.

WATER GAS MADE WITH LIGHT OIL

2.83 Gal. at 7.2 lbs. per gallon	20.38 lbs.
**Less .42 Gal. Tar at 9.2 lbs. per gallon	—3.86 lbs. x
Net 2.55 Gal. or	16.52 lbs.
Plus 30.3 lbs. Coke (or Anthracite)	30.30 lbs.
Boiler Fuel lbs. per M.C.F. to make steam for auxiliaries	4.50 lbs.
Total lbs. required to make 1 M.C.F. Gas	51.32 lbs.

** *Assumed 15% Tar yield based on oil used per M.C.F.*
These are weighted figures for companies in New England using Light Gas Oil only.

Physical Limitations On Changing From Gas

Domestic Cooking

1. The larger percentage of gas cooking is done on gas designed ranges which cannot be converted to the use of other fuels. To substitute some other fuel for gas would require a new range.

2. If it were desirable to convert combination ranges from one fuel to another, they would also require either grates for coal or burners for oil.

House Heating

1. A great many gas house heating jobs are equipped with gas designed equipment which is not convertible to other fuels.

2. In a large percentage of the homes where a gas conversion burner has been installed the grates have been thrown away and are, therefore, not available to restore the use of coal. In most of these homes, also, the coal bin has been torn down and the basement decorated into a playroom.

Kitchen Heating Equipment

1. The same physical limitations are present in trying to convert gas kitchen heating equipment from one fuel to another that is present in house heating and domestic cooking.

Refrigeration

An Electrolux Gas Refrigerator is impossible to convert to coal and due to lack of certain parts would not be practical to convert to oil.

Automatic Water Heating

1. Transferring water heating equipment from one fuel to another in all cases involves the purchase of new equipment of one type or another.

Commercial Cooking

1. The transfer of commercial cooking equipment to oil or coal in all cases requires the purchase of new equipment.

2. In a hotel, restaurant, or institution, the amount of cooking done on the range or stove represents only between 30 or 40 per cent of the total cooking done. The rest is done on coffee urns, steam tables, fryers, broilers, short-order stoves, etc. As a result, when a gas range is replaced by an oil or coal range there is a tendency towards doubling up on the amount of fuel used because these other operations cannot be done on the oil or coal stove which must oper-

OIL STORAGE HANDLING FACILITIES

In Use or Can be Used at Little or no Expense

	Total Oil	Heavy Oil	Light Oil
Connecticut	7 320 485	4 205 355	3 115 130
Maine	270 000	175 000	95 000
Massachusetts	11 196 950	7 105 750	4 091 200
New Hampshire	674 000	0	674 000
Rhode Island	2 610 000	1 150 000	1 460 000
Vermont	566 700	0	566 700
Total	22 638 135	12 636 105	10 002 030

Can be Made Available but Requires Major Expense

	Total Oil	Heavy Oil	Light Oil
Connecticut	417 500	380 000	37 500
Maine	2 600 000	2 600 000	-
Massachusetts	17 055 000	849 000	16 206 000
New Hampshire	49 000	25 000	24 000
Rhode Island	200 000	200 000	-
Vermont	32 000	-	32 000
Total	20 353 500	4 054 000	16 299 500

ate as long as the restaurant is open. Therefore, there is a lot of wasted heat and this is the reason why you have such a wide differential in the equivalent constant used; namely 10 gallons of oil or 100 pounds of coal for 1 M.C.F. There are many instances where the customer replaced the gas range in a restaurant with a coal or oil range and actually increased the gas consumption and bill. Therefore, there wouldn't be any saving even if they did replace their ranges with oil or coal in a restaurant or institution.

Industrial Load

1. The industrial load has not been considered in these calculations due to the fact that it consists almost wholly of heat treating. Gas for these operations is not alone selected from an economic fuel angle. It is usually selected because certain atmospheric conditions and temperature control are needed within the furnace to turn out the quality of product needed. In these heat treating operations, the fuel cannot be changed without destroying the quality of the finished product.

COMPARISON OF TON MILES HAULAGE REQUIREMENTS IF ALL NEW ENGLAND GAS CUSTOMERS CHANGED TO OIL OR COAL

	GAS CUSTOMERS					
	33 1/3% of Total Ton Miles Made From Heavy Oil	16 2/3% of Total Ton Miles Made From Light Oil	50% of Total Ton Miles Made From Coal or Coke	Composite Usage Gas Customers Ton Miles	Oil Customers Ton Miles	Coal Customers Ton Miles
Domestic Cooking	159 476 692	73 414 497	126 837 848	359 729 037	613 083 626	1 357 159 320
House Heating	46 812 039	21 558 808	37 223 471	105 589 318	195 179 250	79 796 845
Kitchen Heating	3 252 427	1 497 525	2 508 728	7 258 680	15 958 020	5 645 700
Automatic Water Heater	27 287 513	12 562 880	21 699 090	61 549 483	123 724 800	67 841 100 (1)
Tank Water Heater	34 895 300	16 068 800	27 754 650	78 718 750	164 670 000	86 768 550 (2)
Refrigeration	14 541 375	6 695 750	11 564 437	32 801 562	62 370 000	32 801 562*
Miscellaneous	1 867 194	887 170	1 472 337	4 226 701	7 726 320	3 169 368
Commercial Cooking	32 347 727	15 260 074	25 713 422	73 321 223	269 653 800	82 547 100
Commercial General	19 291 347	8 878 920	15 332 816	43 503 085	96 476 158	47 938 464
Industrial Heat Treating	70 648 661	32 516 204	56 153 824	159 314 689	353 327 436	122 582 988
Industrial Miscellaneous	6 266 049	2 974 330	5 139 659	14 380 038	32 339 412	11 169 796
Total	416 683 324	192 309 018	331 400 284	940 392 626	1 939 507 882	1 896 418 793

* This figure is the same as that of the Composite Usage of Gas Customers although gas refrigerators cannot be converted to coal, in order to derive at a total figure for coal customers, this figure was used in the coal column.

Based on the assumption that all coal comes from Pennsylvania or a distance of approximately 450 miles, and all oil comes from Texas a distance of approximately 2,000 miles.

(1) and (2) ..... These figures are used when hot water is obtained from an indirect conversion heater connected to a central heating plant. If a pot stove were utilized in place of above hook-up, figure (1) would become 104,490,000 ton miles and (2) would become 133,650,000 ton miles.

COMPARISON OF TON MILES OF AVERAGE INDIVIDUAL CUSTOMER USES - GAS, OIL, AND COAL
TON MILE HAULAGE REQUIRED TO PERFORM CERTAIN SPECIFIC TYPES OF HEATING OPERATIONS

	GAS CUSTOMERS					
	33 1/3% of Total Ton Mile Made From Heavy Oil	16 2/3% of Total Ton Mile Made From Light Oil	50% of Total Ton Mile Made From Coal or Coke	Composite Usage Gas Customers Ton Mile	Oil Customers Ton Mile	Coal Customers Ton Mile
Domestic Cooking	187 511 756	97 024 598	253 675 696	538 212 052	613 083 626	2 714 318 640
House Heating	55 137 031	28 484 663	74 446 942	158 068 636	195 179 250	159 593 690
Kitchen Heating	3 830 835	1 979 070	5 017 457	10 827 362	15 958 020	11 291 400
Automatic Water Heating	32 140 493	16 603 160	43 398 180	92 141 833	123 724 800	135 682 200 (1)
Tank Water Heating	41 102 600	21 236 600	55 509 300	117 848 500	164 670 000	173 537 100 (2)
Refrigeration	17 127 750	8 849 000	23 128 875	49 105 625	62 370 000	49 105 625*
Miscellaneous	2 210 148	1 161 138	2 944 674	6 315 960	7 726 320	6 338 736
Commercial Cooking	38 100 492	20 378 830	51 426 843	109 906 165	269 653 860	165 094 200
Commercial General	22 720 527	11 733 830	30 665 636	65 119 993	96 476 158	95 876 928
Industrial Heat Treating	83 204 406	42 970 812	112 307 649	238 482 869	353 327 436	245 165 376
Industrial Miscellaneous	7 615 528	3 931 373	10 279 318	21 826 219	32 339 412	22 339 592
Total	490 701 570	254 353 074	662 800 570	1 407 855 219	1 939 507 882	3 775 344 087

* This figure is the same as that of the Composite Usage of gas customers. Although gas refrigerators cannot be converted to coal, in order to derive at a total figure for coal customers, this figure was used in the coal column.

Based on the assumption that all coal comes from West Virginia or a distance of approximately 900 miles, and all oil comes from Texas or an approximate distance of 2,000 miles.

(1) and (2) These figures are used when hot water is obtained from an indirect conversion heater connected to a central heating plant. If a Pot Stove were utilized in place of above hook-up, figure (1) would become 208,980,000 mile ton and (2) would become 267,300,000 mile ton.

War Production Board

Restrictions on Cooking Equipment

Non-electric cooking equipment used in restaurants, hotels, cafeterias, etc., was put under strict production and distribution control Oct. 1st by the War Production Board.

Beginning October 1, manufacturing of some types of equipment must cut their use of iron and steel by 75 percent, based on 1941 production, for both new equipment and repair parts.

The provision does not apply to orders for the Army, Navy, Maritime Commission War Shipping Administration, and the Defense Plant Corporation.

Production of other specified types of such equipment is completely prohibited.

Sales of cooking equipment—both new and used—to restaurants, cafeterias, cafes, and similar establishments is prohibited except with specific authorization of the Director General for Operations. It was pointed out that authorizations will be granted only in the most essential cases. The authorization must be applied for on Form PD-638 A. Deliveries to specified government agencies are not covered by this provision.

The order (L-182) restricts use of iron and steel in such items as bakers, broilers, fryers, griddles, grills, hot plates, ovens (except built-in types), ranges, roasters, steamers, toasters, urns and warmers. Only equipment operated by coal, wood, oil, gas, or other non-electric fuel is covered. Household cooking appliances are not affected.

Production and delivery of electrically-operated cooking equipment has been restricted by previous WPB orders.

Production of the following products is stopped entirely as being nonessential: barbecue machines, chicken singers, chop suey ranges, cruller fryers, cup warmers, dish warmers, egg boilers, nut blancher ovens, nut fryers, nut roasters, oyster stoves, peanut roasters, plate warmers, potato chip fryers, roll warmers, rotisseries, sausage warmers, waffle irons and warming ovens. Repair and replacement parts can continue to be made for these, however.

Production and Distribution Gas Cylinders

Control over production and distribution of gas cylinders was ordered Sept. 30th by the War Production Board with issuance of General Preference Order M-233.

Gas cylinders are steel containers or steel drums used primarily for shipment of various types of gases charged at high or low pressure. The order provides that between now and January 1, 1943, production and delivery of the cylinders and cylinder forgings will be subject to such directions as may be issued by the Director General for Operations.

After January 1, production and delivery of the cylinders will be permitted only as specifically directed by WPB. If necessary, in granting authorizations, WPB will ignore ratings assigned to particular contracts or purchase orders in order to meet the requirements of the war program.

Producers are also required to submit on the 25th of each month, beginning October 25th, production and delivery schedules for the third following calendar month, on Form PD-662.

Gas cylinders are now used almost entirely by the armed forces.

Part 1075—Construction

Supplementary Conservation Order L-41-b, issued October 2nd, is hereby amended to read as follows:

1075.3 *Supplementary Conservation Order No. L-41-b.* (a) Conservation Order L-41, as amended, shall not apply to construction begun prior to January 1, 1943, which is necessary to the conversion or substitution of heating equipment to permit the use of fuel other than oil, electricity, natural gas, manufactured gas, or mixed natural and manufactured gas.

(b) Conservation Order L-41, as amended, shall not apply to construction begun prior to January 1, 1943, which is necessary to the installation or application in buildings, structures or projects of the following materials and equipment: Insulation materials, air cell pipe coverings, weather-stripping, storm windows and doors; *Provided, however,* That no rubber, cork, or metal (other than fastenings), shall be used in such installation or application.

Production Curb Lifted on Gas Unit Heaters

Restrictions on production of gas unit heaters, adaptable for economical heating of war plants, were removed Sept. 20th by the War Production Board by amendment (No. 1) to General Limitation Order L-173.

Unit gas heaters use less critical materials than other types in relation to their heating capacity and are particularly effective in heating large floors or sheds. In view of other WPB orders affecting distribution and operation of the heaters, it is not expected that this action will make heaters available to anyone but the armed forces and war plants.

Office of Defense Transportation

Fleets of Trucks and Buses

Rules for filing of applications for Certificates of War Necessity for fleets of trucks and buses were issued Oct. 13th by the Office of Defense Transportation.

Operators of more than two commercial motor vehicles must obtain fleet Certificates for all vehicles, while operators of one or two vehicles require a single unit Certificate for each vehicle.

Certificates of War Necessity are required under General Order ODT No. 21. Other truck conservation orders, including General Order ODT No. 17, governing operations of contract and private carriers remain in full force and effect.

Text of the rules governing the filing of fleet applications follows:

Motor carriers of property subject to General Order ODT No. 17 who maintain more than one operating unit must apply for Certificates of War Necessity by operating units. Information concerning the operations of any one vehicle must not appear on more than one application.

An operating unit of a motor car-

rier consists of those motor truck operations performed wholly within a local area (i.e., within any municipality or urban community and a zone extending twenty-five (25) air miles from the boundaries thereof, or between contiguous municipalities or urban communities), together with motor truck operations serving a point or points beyond the local area from a home or base terminal or terminals located within such local area, as well as operations performed outside such local area by trucks which are operated, maintained, serviced and routed under immediate supervision, direction and control exercised in such local area.

Any operator of trucks not subject to General Order ODT No. 17 may file a single application for a Certificate of War Necessity from the carrier's home office covering all vehicles operated or may file separate applications by any units the carrier desires, provided information concerning the operations of any vehicle does not appear on more than one application. For example, if a carrier maintains more than one operating division, a separate application may be filed for each such division, or if a carrier has trucks registered in more than one city or town, a separate application may be filed for vehicles registered at each such location.

Each motor carrier of passengers must file a single application from his home office covering all vehicles operated.

If an operator has not received sufficient application blanks to apply for Certificates of War Necessity in a manner described above, he should advise the Central Mailing Office, Office of Defense Transportation, Post Office Box 2259, Detroit, Michigan, as to the type and number of application blanks required. On the other hand, if an operator has received more application blanks than needed, all application blanks which are not filled out must be returned to the same address, with a notation on each unused blank designating the serial number of the application or applications containing the required information.

Long Distance Phone Put on Priority Basis

All long-distance telephone calls, beginning Nov. 1, will be subject to cutting off by operators if they are not in the interest of the war and public safety, the Board of War Communications announced Oct. 9th. Operators will have the right to listen in and clear the wires for calls of higher priority.

The B. W. C. designated as authorized persons or agencies entitled to use toll priorities the President, Vice-President, Cabinet officers, members of Congress, Army, Navy, aircraft warning service, Federal, state and municipal government departments and agencies, embassies, legations, commissions of the United Nations, civilian defense organizations, Red Cross, state and home guards, essential war industries, essential services such as communications, transportation, power, water, fuel, press associations and newspapers, and health and sanitation services.

Armed Forces Come First

The order provides that when persons entitled to priority ratings place long-distance calls they should inform the operator of the call's priority status. Should any one falsely attempt to obtain priority on a call, "appropriate governmental action" will be taken, and in addition the fraudulent party will lose his telephone facilities.

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Priority will be given to calls concerning:

Arrangements for moving armed forces during combat operations.

Extremely urgent orders to armed forces.

Immediate dangers due to the presence of the enemy.

Hurricane, flood, earthquake or other disasters affecting the war effort or public security.

Priority will be given also to any other calls requiring immediate completion for the national defense and security, the successful conduct of the war or to safeguard life and property.

Office of War Information

Order P-46 Amended

The amount of scarce metals that public utilities may use for maintenance and repair of transmission and distribution systems during the last quarter of 1942 is cut approximately 40 per cent under Order P-46 as amended October 10th. A reduction of the same percentage has also been made in permissible inventories.

The amendment brings the WPB Power Branch's control of materials usage by utilities in line with program determinations recently recommended by the WPB Requirements Committee.

Previously a utility could use as much scarce metal for maintenance, repair and for small construction jobs as it used during a corresponding quarter in 1940. Under the amended order this amount is cut to a percentage of the base period, the reduction amounting to approximately 40 per cent.

The metals affected are chiefly copper and steel, and the cut is possible largely because all non-essential utility maintenance and construction has been halted.

The amended order also requires, for the first time, that electric utilities make at least 75 per cent of their wire, cable and bus bar purchases from the inventories of other utilities instead of from manufacturers. Gas and water utilities must get at least 40 per cent of their pipe and other similar supplies from the inventories of other gas and water utilities.

All ratings assigned by the order for materials required for maintenance and repair have been raised from A-2 to AA5, with a rating of AA-2 for emergency repairs.

The amended order contains a specific definition of what is meant by the inventory of a utility, making it clear that it does not include material which a utility obtained under a project rating for the construction of a specific war project (such as a new transmission line). Of course, any material left after the completion of the war project goes into the inventory of the utility and becomes subject to control under the order.

The amended order also makes it clear, in line with the recent assignment to the Bureau of Governmental Requirements of WPB of all public sanitation utilities, that although such utilities will remain under P-46 until the Bureau of Governmental Requirements gets out its own order, they are to send all communications and applications to the Bureau instead of to the Power Branch.

Previously there was confusion as to whether the Power Branch or the Bureau of Governmental Requirements handled water and public sanitation utilities. It was decided recently that the Power Branch would handle water problems and the Bureau of Governmental Requirements would handle public sanitation utilities.

Supplementary Orders P-46-a and P-46-b have been reissued, without changing their meaning, to accord with the revised wording of the basic order.

Office of Price Administration

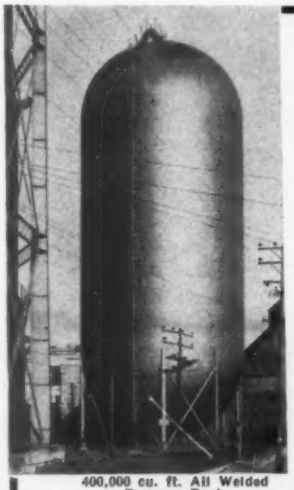
Free Services by Utilities

A broadcast, Sept. 21st, to all cities on teletype circuit—Attn. OPA head attorneys.

Problems raised by the supplying of "Free Services" by utilities and others should be decided in accordance with the following rules:—

1. If no charge was made for the service in March 1942 and the public utility continues to supply the service to all persons purchasing gas or electricity no charge may be made for the service. It may be assumed that a portion of the utility rate was the price for the service or that the seller was being otherwise compensated through the purchase of the gas or electricity. Any charge for such service at the present time would be an increase in price and therefore a violation of the applicable price regulation, which in most cases would be MPR 165 as amended. This does not involve the fixing of the rate for supplying the gas or electricity, but merely prevents an increase in the charge made for the so-called "Free Service." This same rule applies where a private seller, who was supplying a free service in March 1942 in connection with the sale of a commodity, now attempts to institute a charge for continuing to supply the service to persons who purchased the commodity. This situation would also involve an increase in the charge and would therefore be

(Continued on page 54)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W. P. B. and Natural Gas

(Continued from page 27)

Competition for markets is only part of the picture. There is also the very active competition for supplies. We know both these must receive consideration even if we cannot let them stop any action needed for the war effort. We cannot mince words on this point. Some of the industry will be called upon to make sacrifices of advantages.

The existence of this dual competition for markets and for supplies will make some sacrifices doubly hard. I have in mind a rather typical case. Company A through an expensive and what turned out to be a far-sighted leasing and development program has secured a surplus supply of gas which was expected to give it a substantial leverage in order to get into Company B's market. Because of war developments, Company B has had an unexpected increase in the amount of industry in its territory. Certainly we cannot allow Company A to duplicate Company B's facilities by going to B's market. Either B must surrender its market to A along with its distributing facilities, or A must surrender its producing facilities to B, or A must supply gas to B so that B can take care of its war load. The last of these is obviously the least disruptive of the alternative treatments. Probably the management of both companies will feel a great sacrifice has been made by this solution even if the price for the gas is adjusted equitably.

Another case which may become even more common. Company C and Company D are in adjoining territories and have emergency inter-connections. Both have built up what ordinarily would be considered to be curtailable loads. However, a much larger proportion of Company C's loads have been converted to war industry. The policy in the curtailment orders of the War Production Board will require Company D to curtail all of its non-essential load and deliver released gas to Company C before any curtailment of Company C's war loads can be made. In other words, the supplies of the two companies are to be pooled and curtailment met according to a combined curtailment schedule.

We have found cases like this where the prices of gas have been such that relatively cheap loads have not been curtailed while higher rate loads which were less essential have been sacrificed. The matter of the price of gas which has to be transferred under a combined curtailment schedule or for any other purpose is not a responsibility of the War Production Board. We are not unmindful of the fact that our requirements actually result in firming up sales that have been contracted for on a surplus basis under the existing rate and service classification schedules. However, we are not empowered to adjust the economic dislocations arising out of protecting war industries. Our ability to handle this phase of the problems is limited to a selection of that alternative solution which demands the least sacrifice. The investigation and study which that requires often is greater than that required to determine what the solutions are.

Mobilization always produces hardships on individuals. Sometimes these can be adjusted equitably and sometimes they cannot. I cannot help thinking of human beings that are in much the same position. John Doe, a bachelor, has to leave his business to his competitor who has a deferment because of dependencies. Dr. Jones has to leave his practice to a doctor the Army won't take. There are Doctor Joneses in every city and probably most villages throughout the United States who because of the obligation entailed in having the medical training must leave their practice and leave their families to struggle along on an Army salary Even these sacrifices seem minor compared to the supreme sacrifices that John Doe or Dr. Jones might have to make.

The gas industry has an obligation by virtue of its possession of a large share of our most critical material, steel, which makes up their valuable transportation arteries. The obligation that should override many other obligations is to mobilize this steel for the war. After hearing all of the shortages that exist in so much of the country, one cannot be starry-eyed and call upon the industry to spring forward and take on new territory even though that would be a more appealing role. By and large, the industry has already taken on many new loads and the serving of these adequately and the continuation of adequate service to the older customers is not going to be easy. What appears to be the thing of greatest value to the war is the willingness to cooperate and the ingenuity and resourcefulness of you and your associates in the industry who are responsible for the operation of these facilities. The work that has been described by the speakers who have preceded me is ample evidence of this.

Presented at the 24th Annual Meeting, American Gas Assn., Chicago, October 5-6, 1942.

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News of the Gas Industry

Institute of Gas Technology Opens 2nd Academic Year

The Institute of Gas Technology, located at Illinois Institute of Technology, Chicago, has opened its second academic year with three new staff appointments and ten new fellows, Director Harold Vagtborg has announced.

New appointments to the staff are Dr. F. W. Sullivan, Jr., technica' director, and A. D. Singh and Orin D. Cunningham, research associates.

Dr. Sullivan holds B.S., M.S. and Ph.D. degrees from the University of Michigan. He was director of chemical research for the Barrett Division, Allied Chemical and Dye Corporation, before coming to the Gas institute. Dr. Sullivan's coming to Chicago is a homecoming for him, as he was formerly director of research for the Standard Oil Company of Indiana.

Mr. Singh has been research assistant in chemical engineering at the University of Illinois for the past ten years. He has also served as technical adviser to Chicago's Department of Smoke Inspection and Abatement. He holds B.S. and M.S. degrees from the University of Illinois.

Mr. Cunningham holds B.S. and M.S. degrees from Northwestern University and Montana, respectively. He was formerly on the research staff of the Reilly Tar and Chemical Company in Indianapolis.

Three new appointments have also been made to the stenographic staff. They are Anna Rubaine, University of Illinois; Katherine E. Albro, Barnard College of Columbia University; and Betty Jane Larr, Western Michigan College.

The new fellows and the institutions from which they were graduated are: Willard M. Dow, Colorado School of Mines; Roy C. Feber, Jr., University of Nebraska; Alan E. Florin, Lawrence College; W. Madden Gregory, Vanderbilt University; William Johnston, University of Texas; Richard A. Nevill, Texas A. and I.; Thomas L. Pelican, Colorado College; Leonard E. Savory, University of Denver; John W. Selph, Jr., Vanderbilt; and Erwin R. Strong, Jr., Texas A. and I.

These students were selected from more than one hundred fifty candidates. They are fresh from three months of summer employment in the gas industry. They spent the opening week at the Institute in becoming oriented to the institution and taking collect achievement tests designed to acquaint the faculty with each student's capacities.

New staff members and students were welcomed to the Gas Institute by Henry T. Heald, president of Illinois Institute of Technology, with which the Gas Institute is affiliated; Director Vagtborg; and R. B. Harper of the Gas Institute board of trustees. Vice-President L. E. Grinter of Illinois Tech, and Dr. Thomas C. Poulter, scientific director of the Armour Research Foundation, third unit of the Technology Center being built around Illinois Tech, also participated in the welcome exercises.

The Institute of Gas Technology, created by members of the gas industry for service to that industry, was founded in 1941 to train gas chemists and engineers, to conduct research on fundamental aspects and specific problems of the industry, to collect and disseminate appropriate scientific information and to encourage research within the industry.

It is the only school in America offering a four-year program of specific training in gas technology, leading to a Ph.D. degree, solely to appointed fellows.

Gas Institute research, which is separate from but correlated with the educational program, includes several new projects, to be handled by the growing technical staff. Increases in equipment are also being installed to increase the laboratory space by approximately fifty per cent.

Under the supervision of Dr. Julian F. Smith, technical librarian, the Gas Institute library has grown to nearly fifteen hundred volumes during the summer. Acquisitions include sets of such important periodicals as Chemical Abstracts, Journal of Land and Public Utility Economics, Brennstoffchemie and Berichte der deutchen chemischen Gesellschaft. Technical dictionaries in about a dozen foreign languages have also been added to the library.

A HALF CENTURY OF SERVICE IN THE GAS INDUSTRY

After receiving the first 50-year service pin ever awarded by Portland (Ore.) Gas & Coke Company, C. F. Adams reminisces with A. W. Lembach and E. E. Rosenau, veteran service men. Adams was president of the utility from 1892 to 1910, president of the board of directors from 1910 to 1933 and is still a member of the board. He is also the oldest living ex-president of the Pacific Coast Gas Association, having held the office in 1899. He is chairman of the board of directors of the First National Bank in Portland.

Minimizing Coal Storage Losses

To assist commercial coal users in minimizing storage losses, the Division of Solid Fuels Utilization for War of the Bureau of Mines is organizing a group of experts to advise industries on best methods of stockpiling coal to avoid spontaneous heating and degradation of the stored product, Dr. R. R. Sayers, Director of the Bureau, announced recently.

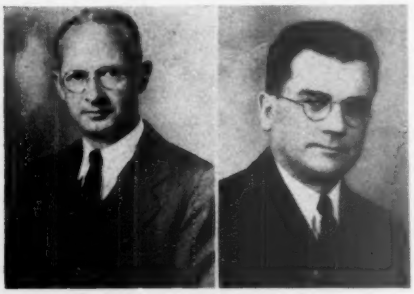
Industrial users of coal have established or are planning to accumulate larger reserves to avoid possible transportation difficulties, Dr. Sayers informed Secretary of the Interior Harold L. Ickes, and it is extremely important that damage to stockpiles be controlled so that war production will not be impaired. Coal-storage problems have increased because larger amounts are being stored and many new consumers now are stockpiling coal for the the first time, the Director added.

The Bureau of Mines is making a survey of the action of coal in storage under various conditions in all parts of the United States. Experts who will assist in this survey include W. D. Langtry, H. C. Carroll, W. W. Anderson, G. E. Keller and R. W. Langtry, all of the Commercial Testing and Engineering Company, 307 North Michigan Avenue, Chicago, Illinois, in the Midwest; and Douglas Henderson and C. T. Engvaldsen of the firm of Gould, Henderson and Brunhes, 215 Fourth Avenue, New York, in the East.

Peoples Natural Gas Company Announces Executive Changes

Edward M. Borger, president of the Peoples Natural Gas Company, has been granted a leave of absence to join the American Field Service, the board of directors of the company announce. Mr. Borger sails to join a unit of the Field Service abroad, with which he expects to serve as an ambulance driver.

The American Field Service, founded in France in 1914, has performed its relief activities in virtually all the theaters of action in the present war and is now operating with the American, British and Free French troops in the Middle East.



Edward M. Borger John J. Jacob, Jr.

John J. Jacob, Jr., executive assistant to Mr. Borger, has been elected a vice president and manager of the company, the board also announced. S. C. Preston, vice president of the company since 1936, continues in that office.

Mr. Jacob joined Peoples Natural Gas in 1922 as a member of the civil engineering staff, and was later promoted to chief civil engineer. He was elected a director of the company in 1938 and became executive assistant to the president in 1939.

J. French Robinson, former president of Peoples Natural Gas Company and now president of East Ohio Gas Company, Cleveland, was elected a director.

Mr. Borger succeeded Mr. Robinson as president of Peoples Natural Gas Company in November, 1940. He began to work for the company as a stenographer in 1918. On completing his law studies at Duquesne University he moved up into the legal department. In 1935, then aged 34, he became general counsel for Peoples Natural Gas Company, Hope Natural Gas Company, New York State Natural Gas Corporation and affiliated companies.

Noted Metallurgist to Direct Battelle's Fundamental Research Activities

Charles G. Maier, noted research metallurgist for nearly twenty years associated with the U. S. Bureau of Mines, has been named to the supervisory staff of Battelle Memorial Institute, Columbus, Ohio, one of the country's largest industrial research foundations. According to Clyde E. Williams, Battelle director, Mr. Maier will direct and correlate an enlarged program of fundamental research and will serve as advisor and consultant to the Institute's war research for the government and industry.

Since its founding in 1929, Battelle Memorial Institute, through its program of fundamental research, has made many contributions to basic science which today are essential to the war effort. The enlarged program which Mr. Maier will initiate is expected to result in new technological knowledge to be utilized in the fields of chemistry, fuels, ceramics, and metallurgy.

FPC Authorizes Panhandle Eastern Pipe Line Co. to Construct 17 Mile Pipe Line

The Federal Power Commission on October 6th announced its issuance of a limited certificate of convenience and necessity to the Panhandle Eastern Pipe Line Company, Kansas City, Missouri, for the construction of a 16-inch pipeline about 17 miles long extending from a point on the 22-inch main line of Panhandle's wholly-owned subsidiary, Michigan Gas Transmission Corporation, in Lucas County, Ohio, to the 16-inch line of The Ohio Fuel Gas Company in the vicinity of Toledo, Ohio.

Construction of the new interconnection will relieve the threatened shortage of natural gas in the Appalachian area first reported in a survey made by the Federal Power Commission for the War Production Board early this year. Estimates of the amount of gas to be delivered through the new line range as high as 10 billion cubic feet per year.

Wailes Dove-Hermiston Corp. Offers Prizes for Photos

Wailes Dove-Hermiston Corporation, Westfield, N. J., will award a total of $250 in War Bonds and Stamps for the best photos and descriptions of jobs involving the use of their products.

The contest runs through November with two subject classifications, (1) Jobs on which their products have been in satisfactory service for a number of years, and (2) Reports and photos of recent jobs on which their products were used or are being used.

There are 11 prizes in each classification. First prize, $50 War Bond; Second, $25 War Bond; Third, $10 in War Stamps and eight prizes of $5 each in War Stamps.

Complete details of the contest and entry blank are now available. Final date for submitting entries is December 1st.

Huge Gas Refrigerator Shipment for Texas Housing Project

Government ordnance plant workers in shell factories and other munitions centers will enjoy more comfortable living quarters at the Irvington, Kelly and San Felipe Housing Project, Houston, Texas, since the government delivered 1225 new Servel Electrolux refrigerators to be installed in 1225 apartments.

Two freight trains were required to move in the huge shipment, cost of which amounted to $97,000 according to E. W. Blum, director of the Houston Housing authority. The refrigerators have been stored in temporary warehouses and freight cars, and are being moved into the apartments as rapidly as gas connections are made and decorations finished. Six and eight cubic foot models are both involved, and are installed along with four-burner "Victory" gas ranges, small unit heaters and individual water heaters in the project apartments.

The 100% gas installation is supposedly the largest such in the country's history, according to Mr. Blum. The apartment buildings were constructed to solve serious housing problems which found badly needed war plant workers living under bad conditions.

Dr. Robert E. Wilson Selected to Receive Perkin Medal

Dr. Robert E. Wilson has been selected to receive the Perkin Medal of the Society of Chemical Industry for 1943. This medal is awarded annually for outstanding work in applied chemistry and the medalist is selected by a Committee representing the five chemical societies in the United States.

Dr. Wilson was born in Beaver Falls, Pennsylvania, and graduated from The College of Wooster, Ohio, in 1914. He then took two years of advanced work in chemical engineering at the Massachusetts Institute of Technology. He entered the government service at the outbreak of the first World War, advancing in rank to Major in the Chemical Warfare Service in charge of research Laboratories working on gas mask absorbents and related problems.

The medal will be presented on January 8, 1943, at a meeting to be held at The Chemists' Club, New York City.

Home Insulation for Fuel Conservation

Responding to the popular demand for specific information on the insulation of dwellings as a fuel economy measure during the current emergency, the Bureau of Mines has compiled and published a

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Cincinnati — Ohio
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Years

circular on "Home Insulation With Mineral Products—Conservation Of Fuel For War."

The Bureau's survey includes a table showing the thermal conductivity of various insulating materials and figures on the production of mineral wool and vermiculite for home insulation.

A copy of Information Circular 7220 may be obtained free of charge from the Bureau of Mines, Department of the Interior, Washington, D. C.

Newcomb Becomes Vice Pres. of Servel, Inc.

The election of Harry Newcomb, as a vice president of Servel, Inc., of Evansville, Ind., has been announced by Louis Ruthenburg, president of the company. Mr. Newcomb will continue as general manager of Servel's electric refrigeration division, a post he has held since 1936. He is also general manager of Servel's new gas water heater division which was established last year. He joined the Servel organization in 1934 as manager of the company's commercial refrigeration division.

Mr. Newcomb has been active in the manufacture and distribution of commercial refrigerating machines designed for operation in meat markets, stores and commercial establishments of all kinds. He has also been in charge of the company's electric air conditioning division which has made great progress in recent years. Both of these divisions are now devoted almost entirely to the manufacture of various war products largely refrigeration equipment for the army, navy, air forces and war plants.

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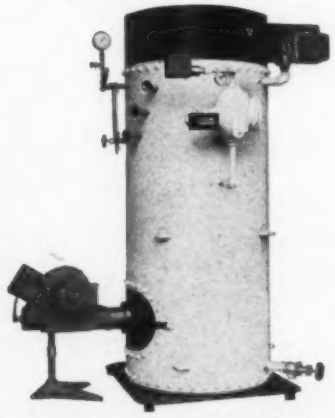

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Gas Industry Men Prominent Among Awardees in Lincoln Foundation Welding Study

Gas industry men figure prominently in the awards announced October 6th in the nationwide 2½-year $200,000 scientific welding study program sponsored by The James F. Lincoln Arc Welding Foundation, Cleveland, Ohio.

In the gas industry, amounts of the chief awards, the names, subjects and connections of awardees are as follows:

$3,700, J. C. Jackson, chief engineer, Pittsburgh, Des Moines Steel Company, Pittsburgh, Pa. Subject matter: A newly developed welded container for the storage of liquefied gas which costs less than 3% of previously available types and which may be used to increase the annual volume delivered by the nation's natural gas pipe lines by 25% at a saving of 4½% of present total pipe line operating costs. Liquefied gas storage containers have been made possible because of electric fusion arc welding which alone can make seams in such containers which will withstand severe temperature variations and remain leakproof.

$100, Richard T. Logeman, consulting engineer, Chicago, Ill. Subject matter: An improvement in the design of steel storage tanks to prevent failure due to over-stressing certain positions subjected to a drop in temperature. To neglect temperature stress in a restrained structure is not good engineering. In a bridge, or similar structure, provision is made for expansion and contraction and the same provision is necessary in a tank to remove the restraint and make for a safe design. An expansion joint increases the cost—2% to 3%—but produces a safer structure.

$100, Rudolph Kraus, welding engineer, Stacey Bros. Gas Construction Company, Cincinnati, Ohio. Subject matter: Welded gas holders. A new design intended to replace the courses between the hanging rows of the cup and grip plates with panels. Doing away with the horizontal laps offered the possibility to weld the stiffeners directly to the panels. Surprising results were obtained in the welding of the cups and the grips. A full discussion is presented of the welding of a panel on a production basis as well as the new problems resulting from the field erection of welded lifts.

$100, Harold D. Bickford, mechanical engineer, Lombard Traction Engineering Company, Waterville, Maine. Subject matter: Construction of a steel tank which was fabricated and welded inside of a cement tank which had become unfit for service due to leaks. This work was performed under difficulties due to the near-inaccessibility of the materials and necessity of working after midnight until the following noon. The new steel tank rested upon 6-inch I beams on the bottom of the original rectangular tank. The construction plates were attached to angle irons in the corners and also elsewhere to vertical tees.

$100, Harry A. Erickson, consultant, mechanical engineer, Baltimore, Maryland. Subject matter: Assembly of all of the factual data pertaining to the design of a low-pressure piping system, substituting arc welded and flanged pipe joint construction for screwed and flanged pipe joint construction, specified in the original design.

There was a total of 408 awards going to 458 participants representing every conceivable division of industry.

Roper Corporation Issues Range Service Handbook

George D. Roper Corporation, Rockford, Ill., has released to retail outlets a package program designed to aid in the problem of gas range servicing under war conditions.

This handbook has been prepared to cover the operation of Roper gas ranges as far back as 15 years. It deals with top burners, ovens, broilers, automatic lighters, safety pilots, etc. Amply illustrated and containing answers to specific service problems, it is far-reaching in its scope, and is offered at a cost of 50 cents a copy.

The book should prove invaluable as a text book in service training. It points out the necessity for maintaining good public relations by keeping gas ranges in good operating conditions. The entire plan emphasizes the idea of repairing and reconditioning wherever possible instead of replacing.

Penna. Natural Gas Men's Assn.

The October meeting of Pennsylvania Natural Gas Men's Association was held at the William Penn Hotel, October 22nd.

Speakers included D. P. Hartson, Vice President and General Manager of Equitable Gas Company and Dan S. Keenan, President of Carnegie Natural Gas Company, who discussed remarks made by various speakers at the American Gas Association convention in Chicago, October 5 and 6 on "The Position of Natural Gas in the War and After the War."

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Catalog of Technical Books

The new 1942-1943 catalog of technical books (64 Pages) of the Chemical Publishing Co., Inc., 234 King Street, Brooklyn, New York has been issued. The new format was especially designed to enhance its utility and efficiency. Sections have been subdivided so that needed books or books on similar subjects can be found in a minimum time.

Every important field has been covered —Aviation, Engineering, Radio, Electricity, Mechanics, Chemistry, Formulas, Military and Naval Sciences and Dictionaries (Spanish, Russian, French, German), etc.

These books will be very helpful to students, teachers, and Armed forces—and the technical staffs and workers engaged in war production.

Included in the catalog are the Spanish and Portuguese books of Editorial Tecnica Unida, the Spanish subsidiary of the Chemical Publishing Co., Inc. A copy will be sent to anyone upon request.

Cast Steel Butterfly Valves: Four-page bulletin No. 15-B features heavy-duty butterfly valves which have a sufficient face-to-face dimension to permit the mounting of ball bearings for high pressure service. The chief advantages, applications and general operating characteristics are discussed. Included are complete tables of dimensions with raised face or ring joint flanges. Issued by R-S Products Corporation, Wayne Junction, Philadelphia, Pa.

Refractories: Catalog H.G.-501 issued by Quigley Company, Inc., 56 West 45th St., New York, describes many applications of Hytempite—high temperature cement—including its use in gas plants and coke ovens. Copy sent on request.

Heat Insulating Materials: A general insulation catalog issued by Eagle-Picher Sales Co., Temple Bar Bldg., Cincinnati gives information on their block and plastic materials for many industrial uses. Included are insulating cements, pipe and boiler insulation and insulating wool.

Testing Apparatus: The Precision Scientific Company, 1736 North Springfield Avenue, Chicago, announces the publication of Catalog 700, "Apparatus for Testing Petroleum Products," consisting of 96 pages, 8½ x 11", comprehensively indexed. Presents detailed information on apparatus for standard methods of testing asphalt, bituminous materials, automotive and aviation fuels and lubricants, conforming to specifications of the American Society for Testing Materials, Federal Specification Board, British Petroleum Institute, American Association of State Highway Officials, and other governing bodies. Also included are many laboratory utilities, plus an up-to-date compilation of data on thermometers used for petroleum inspection.

Measurement and Control: Catalog 95-A, issued by The Foxboro Company, Foxboro, Mass., describes its full line of instruments for the measurement and control of industrial process conditions. The contents have been prepared with great care, for completeness and accuracy, and is organized to make it easy for the user to choose the type of instrument best fitted to his needs. There are over 200 illustrations.

The 48 pages comprise ten sections, six of them grouping and describing all the instruments, accessories and supplies appropriate to a particular field of application, such as Temperature, Flow, Pressure, Level, Humidity; while the remaining sections cover combination instruments, valves, instrument panels, and similar subjects. Thorough cross-indexing of the contents, plus an ingenious use of colors, makes this catalog a convenient and useful reference handbook of modern instrumentation. Copy will be sent on request.

Regulating Saturation: The Bristol Company of Waterbury, Conn., has published a Data Bulletin, No. 43, on its systems of automatic control for regulating gas saturation in natural gas distribution systems. Sketches are included to show methods of use.

Valves. Plant engineers and executives will be interested in an informative 32-page bulletin E-100, issued by Everlasting Valve Company, describing their quick-operating valves for blow-off, water columns and other boiler room services. The bulletin is profusely illustrated with large, self-explanatory views which clearly show design and construction. The concise text is topically arranged for quick reference. Complete tables of specifications, dimensions and prices are also included to form a comprehensive presentation. Address Everlasting Valve Company, 49 Fisk Street, Jersey City, New Jersey, for a copy.

Worthington Bulletins: Published recently by Worthington Pump and Machinery Corp., Harrison, N. J., are illustrated bulletins on Hot Process Water Softeners, Steam Jet Ejectors, Horizontal Single Piston Pumps, Duplex Plunger Power Pumps, Centrifugal Pumps, Horizontal Single Stage Compressors, "Worthite" (special alloy) Pumps for hot brine slurries, Four Cycle Gas Engines, Horizontal Duplex Compressors—75 to 3000 H.P. and a special bulletin on "Worthite" including analysis and properties.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, of American Gas Journal, published monthly at East Stroudsburg, Pa., for October, 1942.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared S. G. Krake, who, having been duly sworn according to law, deposes and says that he is the Manager of the American Gas Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations.

1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, American Gas Journal, Inc., 53 Park Place, New York City; Editor, Alfred I. Phillips, 53 Park Place, New York City; Business Manager, H. T. Matthew, 53 Park Place, New York City.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) S. G. Krake, 53 Park Place, New York City.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom said trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is ——. (This information is required from daily publications only.)

S. G. KRAKE,
Manager.

Sworn to and subscribed before me this 29th day of September, 1942.
(Seal.) MARY E. KELLEHER.
(My commission expires March 30, 1944.)

Modzikowski Elected Commander of American Legion Post

S. J. Modzikowski, Chemical Engineer of the Peoples Gas Light and Coke Company, Chicago, has recently been elected Commander of the Peoples Gas Post of the American Legion.

Mr. Modzikowski was formerly actively engaged in American Gas Association work, having served as Chairman of the Chemical Committee and Vice Chairman of the Technical Section for a number of years. He is in charge of the physical and chemical testing laboratory of the Peoples Gas Light and Coke Company.

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Research Engineer for investigation of new methods of gas manufacture. Experience in gas industry desirable but research training and ability of paramount importance. Give full details with military status in letter. Enclose photograph. Write Box 126, c/o AMERICAN GAS JOURNAL, 53 Park Place, New York City.

Texas Pipe Line To Be Extended To New York

The twenty-four-inch pipe line from the east Texas oil fields to Norris City, Ill., will be extended to the Atlantic seaboard. Donald M. Nelson, chairman of the War Production Board, said 224,000 tons of steel will be allocated for the extension.

Petroleum Co-ordinator Harold L. Ickes said the 857-mile $60,000,000 extension will assure a direct daily pipe-line delivery of 300,000 barrels of crude oil to the Eastern seaboard.

From Norris City the line will extend across Indiana and Ohio to Phoenixville, Pa., from where branch lines will be laid to the Philadelphia and New York areas. Twenty-five pumping stations will force the oil from Longview to terminals.

Price Administration

(Continued from page 47)

a violation of the applicable maximum price regulation. This rule which prevents any charge being made for a free service which was supplied without charge in March 1942 must be distinguished from the problem of the right of a supplier of a free service to discontinue such free service completely.

2. The discontinuance of such a free service rendered by a public utility in March 1942 to all purchasers of gas or electricity would not be a violation of any presently issued maximum price regulation, such discontinuance, would, however, constitute an increase in the rate actually charged for the utility service and should receive the same attention from the Office of Price Administration as any other attempted increase in public utility rates.

The remaining paragraphs deal with the free service problem when it involves the discontinuance of free services rendered to purchasers of commodities which are subject to price control. In some instances these services may have been rendered without charge by Public utilities to persons purchasing appliances, and in other instances may have been rendered by private sellers. In either case the problem of the prohibition against control of public utility rates is not involved.

3. The discontinuance of a free service which was rendered in March 1942 by sellers of commodities subject to price control without charge only to persons purchasing those commodities, such as coal and oil dealers rendering free maintenance service to stokers and oil burners owned by persons purchasing coal and oil, is a violation of the appropriate regulation, since termination of the free service would be equal to an increase in the price of the commodity. So the dealers, if they continued to sell the coal or oil at the March 1942 price would have to continue to supply the free service. Any discontinuance of the free service would have to be accompanied by a reduction in price for the commodity in accordance with the appropriate maximum price regulation.

4. The discontinuance of a free service rendered to purchasers of appliances purchased before the effective date of GMPR which appliances during March 1942 were sold with the free service, is not a violation of price regulations but may be a violation of any contractual relationship existing between the purchaser of the appliance and the supplier of the service.

5. The discontinuance of a free service rendered to purchasers of appliances sold after the effective date of GMPR, which appliances during March 1942 were sold with the free service, would be a violation of the applicable maximum price regulation since to discontinue it would be equivalent to charging a higher price for the appliance than the price charged during March 1942. Any discontinuance would have to be accompanied by a price reduction as in 3 above.

Above overrules any contrary interpretations, including specifically Washington letter of July 15 to Danbury and Bethel Gas and Electric Company, Connecticut. We are writing Danbury Company reversing our letter.

HENRY M. HART, JR.,
Assoc. General Counsel, OPA.

The Gas Industry in War

(Continued from page 18)

been the subject of frequent commendation and high praise in all its phases by Governmental officials and I am satisfied that with his guidance the Association will continue to justify its existence with these authorities.

It is important that gas company members understand that Association Headquarters takes the position, endorsed by President Hawley and the Committee on War Activities, that it must furnish to the Government war agencies any and all information requested in spite of the fact that some of it may have been furnished by member companies with the pledge that it will be kept confidential and used only in compilations. The Association takes the position that in time of war it has no alternative—the information must be made available. It seems obvious that if the information is refused on the ground that it is confidential, the governmental agency will make the request directly to each company, at the expense of time and the duplication of effort, and, if refused, will become suspicious of the company involved and perhaps take retaliatory action because of the difficulties to which it has been subjected. Do not be surprised, therefore, if you find that a war agency is in possession of information which you have heretofore considered as confidential. The war takes precedence over individual prerogatives!

Presented at the 24th Annual Meeting American Gas Association, Chicago, Ill., October 5 and 6, 1942.

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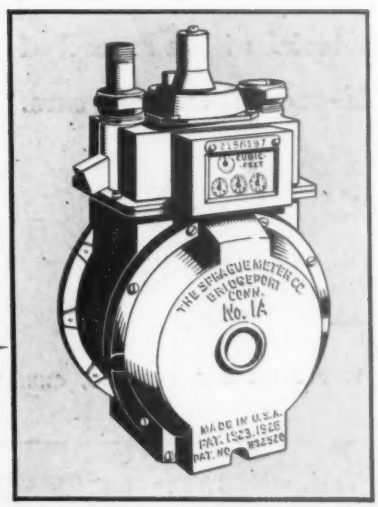

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